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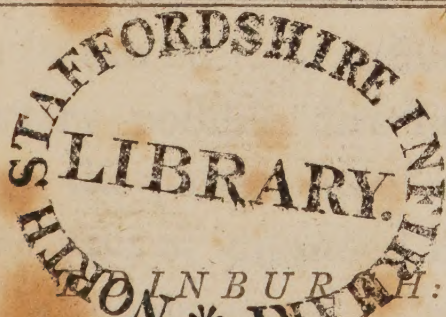
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OBSERVATIONS ON THE PRINCIPLES
OF THE
OLD SYSTEM OF PHYSIC,
EXHIBITING A COMPEND
OF THE NEW DOCTRINE.

THE WHOLE CONTAINING
A NEW ACCOUNT OF THE STATE OF MEDICINE FROM THE
PRESENT TIMES, BACKWARD, TO THE RESTORATION OF
THE GRECIAN LEARNING IN THE WESTERN PARTS OF
EUROPE.

BY A GENTLEMAN CONVERSANT IN THE SUBJECT.



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INTRODUCTION.

THE several departments of human knowledge have in all ages and countries undergone a strange, but uniform fate ; in their outset, wide deviation from truth, and in the result of their progress, accumulation of error. The causes of this seem to be, *1st*, that keen desire implanted in the mind of man to know, as if by intuition, all that can be discovered either with regard to himself or the objects around him ; and, *2^{dly}*, his impatience of success.

THE mischiefs arising from these two sources greatly extend their influence, and spread in every possible direction when error acquires the patronage of authority, and the protection of dignified names. It then takes its chair in the schools, and assumes the pompous titles of profound, refined, or liberal knowledge. Raised to this eminence, the industry of a single

teacher or author may corrupt thousands ; that of a few, whole nations ; and the addition of a proportional number, ruin the education of a world.

THIS universal diffusion of error receives sanction and establishment from the progress of time. It becomes venerable : And every attempt to detect it is branded with the name of profanity or madness. Error triumphs in the smiles and countenance of the great, is distinguished by titles and rank, and enjoys the solid support of emolument : And truth, which had all along been the pretended object of pursuit, is first thrust down to the bottom of the pit, and then buried deeper and deeper under the successive strata of false knowledge. Genius is disgraced, discovery assassinated, and dulness established in all the pride of eminent station.

MANKIND have ever been vain of their knowledge ; a vanity which might

be excused, were the knowledge to which they commonly aspire, of any use or value. The elements of mathematics are indeed scientific knowledge. The system of the planets, discovered by Sir Isaac Newton, is applicative science. The doctrine of the mechanical powers is respectable for its utility, and as being the offspring of principle. But chemistry, whatever it may be at a future period, is still only little more than a mass of deductions drawn from random experiments, a group of phenomena, the mutual connection of which to one another, or their general relation to a common cause, is by no means traced, and their applications to use left equally limited and doubtful. The light that has been thrown on electricity by a great philosopher, does him honour, and will ensure him the gratitude and esteem of posterity : But that branch of knowledge is still in its infancy; and, if greater judgment and caution, than we are able to discern in the many volumes of its late cultivators, be not ex-

ercised, it requires not the gift of prophecy to foretel, that it will prove a fertile source of sophistry and splendid error. The same observations extend themselves to magnetism, to ethics, to politics, and so forth: In all which, attempts have already been made to assign causes before a sufficient number of facts have been collected, and to reason from phenomena not sufficiently understood, to others equally unknown. Illustrations of this and every other particular will occur in the course of this work.

THERE is something that passes in the mind of a great philosopher, even when he expresses himself with reserve, which, while it merits the deepest attention, is however never comprehended, often not even attended to by the commentators, explanators, and pretended cultivators, of his work. Sir Isaac Newton used the word attraction as a term which he did not pretend to explain, and never meant that his followers should engage in the attempt.

His reason for this was well founded. No person knew better than he did the bent of the human mind to invert the order of nature in philosophizing; and, instead of observing and studying phenomena, laboriously and patiently collecting facts, and gradually tracing these to more general facts, till at last they arrive at one which serves for a common connecting cause, he, on the contrary, knew the common practice was to begin with the assumption of a fancied cause, and afterwards, by explanations, to force the facts to an agreement with the cause so assumed.

THE sound philosopher begins with laying in his stock of facts. With these, by repeated and accurate observation he acquires a familiarity, guards against the deception of appearances, studies and contemplates the subject in all its various forms and modifications, traces every relation, and marks every difference, till at last, by a solid, cautious, and broad induction, he ascends to a fact

which unites them all, and which itself receives illustration and confirmation from each of them: For, when any one thing in nature is fully understood, it leads to the discovery of something next and most intimately connected with it. From this the philosopher is led to a similar consideration of a third, and so on proceeds, as it were, from link to link in a common chain, till he reaches the highest: Or he goes on, as it were, from the several points in the circumference of a circle where the radii terminate, along each radius, till he arrives at the point in which they all meet, constituting the centre. This ultimate fact, at which he at length arrives, is his common cause, the fundamental proposition to or from which all his reasonings flow, the basis on which the whole superstructure of his doctrine rests.

STILL, however, he regards this as a fact only, universal indeed with respect to his subject, but subordinate to other facts in the great chain of which it is only a link, and which, according as they stand higher

or lower in the series, act as cause or effect to each other. Finding that this fact connects all the rest, and explains all the phenomena, he admits it as the only cause which a philosopher ought to regard. Far from bewildering himself in vain and fruitless speculations with respect to the nature of this common cause, considered abstractly, and, as it were, in itself in its mode of acting, and so forth, his great care and attention is to ascertain its existence, and get a full and complete acquaintance with the mutual and permanent relations which subsist between it and the effects. Thus far he treads on known and firm ground. Here he stops, and keeps himself on sure guard against the wanderings of fanciful explanation.

WIDELY different from this is the mode of inquiry which the philosophers of another description pursue. Superficially surveying, or totally neglecting the investigation of particular facts, they begin with an enquiry into their ultimate cause,

and, after tedious and fruitless attempts to define, describe, and explain to others a proposition of which they themselves have no adequate idea, their whole after-aim is to reconcile it to the detail of facts. But in this preposterous occupation, they sow the wind, and reap the whirlwind: For they not only find a perpetual repugnance between the phenomena of nature and their imaginary cause, but even, when by much art and labour they at any time seem to succeed in forcing a connection between their fundamental proposition and a few of the phenomena, still the far greatest part of these reject reconciliation.

To conceal this incongruity from the discernment of mankind, and, as it were, from themselves, comes to be their next laborious and hopeful task. Some facts they falsify, others they omit, promise explanations of others which they never mean to give, and, whenever difficulties present themselves, they either postpone the consideration of them to some more convenient oppor-

tunity, or presume upon an agreement in them with their fundamental principle, either as a point granted, or formerly proved.

FOR the sake of accommodating their imaginary cause to the various purposes of explanation, nothing is more common with them, than to vary its original statement; a practice, which its falsity and unfitness, even for their deceitful applications, renders unavoidable.

WHEN they find all this labour to disguise and dissemble insufficient, and see that the discordance and incongruity of their systems are too glaring to escape even common observation, their next shift is to conceal themselves behind the veil of a false candour. They acknowledge the many imperfections of their work, but, at the same time, do their best to secure a decent retreat, and to come off with as little loss as their situation will permit. They extenuate their blunders, and con-

traft their confefſed defects with many pretended excellencies ; they magnify the faults, and depreciate the merits of other doctrines ; and, by every ſuch artifice, ſtruggle hard to detain, if not an abſolute, at leaſt, a comparative pre-eminence. In all the pride of ungenerous emulation, they expoſe to full view whatever they wiſh to appear beſt in themſelves, and worſt in their rivals. When the truth is unknown, theſe arts, dexterouſly played off, and nicely accommodated to times and circumſtances, have often met with ſurpriſing ſucceſs: But when the ſtandard of truth is once erected, when its genuine colours are diſplayed to full view, nothing is more eaſy than the detection, nothing more humiliating to the detected. Still, however, previous to this, and while there yet remains a proſpect of advantage, from the ſoftened acknowledgments of miſtake and imperfection, theſe, after all, are not more frequent than ſincere. As it is not the love of truth that calls them forth, but anxiety to ſupport, as well

as possible, an undermined and sinking reputation, the practice is not more frequent than the impulse of necessity that produces it. Ever ashamed of taking blame to themselves, it is more frequent with such persons to impute their own false conceptions and erroneous modes of reasoning to the imperfect state of the art in general, or the obscure nature of the particular subject.

THIS is an impression very natural to a mind bewildered in error, and in total ignorance of the truth. The study of nature is always simple, clear, and satisfactory, while every deviation from it leads into inextricable perplexity. The light arising from the former, and the darkness from the latter, are in exact proportion to their respective progresses. The advances of the student of nature are like those of a traveller, who begins his journey with the earliest dawn of day. He moves at first with caution, slowness, and circumspection; proceeding afterwards with freedom, firmness, and ease, in pro-

portion to the illumination encreasing all around.

THE deviations of the false reasoner and fanciful systematic, from truth, resemble the wandering of a rash traveller, who sets out on a dangerous journey through an unknown country, with the doubtful gleam of a departing twilight. The first part of his progress is bold and adventurous, but fear, horror, and despondence soon take place of confidence, and become more and more the attendants of his after steps. The former traveller, pursuing a straight, easy, and safe course, soon arrives at his destination*. The distance of the latter from his destination increases with his painful progress.

* The Author of the *Elementa Medecinae*, after giving a very short and comprehensive description of his progress in the studies of physic, concludes with a climax, which Logicians may perhaps think worthy of their notice, as an instance of that sort of rhetorical figure. It is in the following words: “Solo quarto lustro, veluti vatori, ignota regione, perditis, viae vestigiis, in umbra noctis erranti, perobscura quaedam, quasi prima diurna, lux demum adfulsit.”

As the wanderings of the benighted traveller cannot fail to impress him with a due sense of his state; so neither is it in nature, that the ravings of misguided speculation, however fanciful, or perhaps in some respects, ingenious, should infuse into the mind that most pure and exquisite satisfaction that arises from the discovery of truth. The flights of an imagination unrestrained by reflection, and unfettered by strict regard to fact, may beget an evanescent temporary gratification; but it is the certain discovery of useful and important truth alone, that can yield real and permanent pleasure. The former is intoxication and enchantment; the latter is rational and real delight. The systems of the motions of the planets founded upon the hypothetical principle of vortices, when executed with all the pomp of mathematical demonstration, and accommodated to the explanation of the detail of particulars; the fancy of a minute intertexture of vessels, composing the solid mass of animal bodies; and the supposed balance

between the arterial and venous systems, with the subdivisions of these, and inferences and distinctions drawn from them, in explanation of the noted doctrine of plethora, undoubtedly gave a certain kind of joy to De Cartes, Dr. Boerhaave, and Sir Clifton Wintringham. But it was a shadowy unsubstantial joy, a mental titillation, a paroxysm of exultation, to give way upon the first discovery of its delusive cause, to dismay and regret. Widely different from this must have been the pleasure that arose in the mind of Pythagoras, from the discovery of the 47th proposition in the first book of Euclid; or that of Lord Naper upon his discovery of the logarithms; or the serene and solid satisfaction of mind, which Sir Isaac Newton experienced on finding his fundamental principle apply to the whole phenomena of his great and extensive subject, and produce a scientific body of knowledge, which might be entitled *The Science of the Motions of all the*

great Bodies in the Solar System, and probably in all the systems of the universe.

THE cause of the common complaint among system-makers, that the difficulty of their subject prevents the application of their principles to use, and presents insuperable obstacles and embarrassments, is easily accounted for. It may be pointed out in a few noted instances, taken from some of the most prevailing systems of pathology. If it be assumed as a fundamental principle, that a certain tenacity and spissitude of the blood is the cause of diseases; the application of that principle must fail in all the cases where the very contrary consistence is the faulty state of that fluid. If an acrimony in the fluids is laid hold of as the proximate cause of diseases; that hypothesis must fall to the ground in all the diseases where there is no acrimony, or where a contrary state can be demonstrated. If the acrimony is supposed to be an acid; its futility must appear from the insignificancy of employing

only alkaline substances for the cure of diseases: And the equal insignificance of an acid plan of cure, upon the supposition of the cause being an alkaline state of the fluids, makes the same conclusion unavoidable. There has been no end of the suppositions employed by physicians, even as fundamental principles. Among others, a late one of this kind was, that the blood had a power of directing its course in the vessels, and of flowing into one part of the arterial system in too great, into another in too small a proportion. When that was admitted as a fundamental cause of diseases, how was it possible to carry it into application without embarrassment in every step? Where are the remedies endowed with a power of altering such morbid directions of the blood, even in any, much less in every case? Spasm is the last of the erroneous fundamental hypothesis respecting the cause of diseases. But how many diseases are there where there is no spasm, and where its absence is demonstrable? And even in some

cases, as fevers, in the beginning of which certain appearances seem to favour the notion of spasm: All these cease before the end of the disease, and a set of phenomena succeed, that exhibit demonstration of the very reverse of such a state. Now, since the effect, that is, the disease, still remains, its cause, whatever that be, must also remain; but that cause is demonstrably not spasm. Admitting, however, for the sake of following out the argument, that there is a spasm, and that it is so far the granted cause; when the physician sets about the cure, where will he find antispasmodics or remedies endowed with a power of removing the morbid state by resolving the spasm? There is not one. There are powers that relax the system; but in so far as they produce that effect in fevers, they do not remove, but increase the cause of the disease. Now, what is the conclusion that arises from this view of the conduct of system-makers, whether medical or not, in forming their several doctrines? Is it not what has all along been pointed

out, that it is not the difficult nature of the subject, but their fundamental and complete misconception of it that produces all their embarrassments, and gives birth to labours, which are not explanations of the just phenomena of nature, but the hideous caricaturas of a disordered imagination?

It is next to be observed, that after all their artful evasions and false colouring, there never was an erroneous system, such as those to which we have been alluding; the author of which, perplexed and lost in the mazes of his false reasoning, did not find himself obliged to give up by far the greatest part of the detail of facts, as inexplicable upon his assumed fundamental hypothesis, and to have recourse to other causes, likewise of limited extent, and of equal falsity, as so many expletives to fill up defects, so many additional links, to help to bind together the incoherent parts, and give seeming union to the truly heterogeneous mass.

WHILE such is the employment of system-makers, that of other refiners in knowledge, other pretenders to a name and estimation for their philosophical labours, is to corrupt and misrepresent writings and doctrines of a purer kind, which they effect in a variety of ways.

ONE of which, and the most generally practised, is to begin where the author of better judgment had thought prudent to end, showing thereby a merit, only equalled by their demerit in following the contrary practice. The great business of a true philosopher, is to increase the number, and improve the knowledge, of useful facts, and render their application to use more and more subservient to human happiness. But, disdaining this employment as below his attention, or discouraged with a labour too tedious and arduous for his stock of patience and industry, or perhaps perfectly ignorant of the only proper method of prosecuting philosophical inquiry, the false philosopher rushes straight on-

ward to the end of his aim, little studious of the best means of attaining it. Instead, therefore, of labouring by observation and experiment, to enlarge the number of solid and useful facts, from which alone, by a just and careful induction, the laws of nature in any of her departments can be ascertained; his vain attempt is to discover the abstract nature, the mode of operation, the hidden cause of the fact, which his author had taken for his common connecting cause, and which, from the limited nature of the human faculties, he had been obliged to consider as an ultimate fact, or as a law of nature, of which no cause more general than itself could be assigned. Finding, therefore, in the great chain of cause and effect, nothing more general, and impelled by an avidity inherent in the human mind, of pressing forward to the attainment of knowledge beyond its power, he at once plunges himself into an ocean of endless conjecture and hypothesis, and thereby brings reproach, in the very principles upon

which he rests it, on the doctrine or branch of knowledge which he meant to improve.

THE several explanations of the cause of attraction, since Sir Isaac Newton delivered his venerable system to the world, are so many examples, directly in point, of this false mode of improving, or, to speak more properly, of corrupting a true doctrine. But while this practice of poisoning in their source the fountains of truth is too glaring to be called in question, and too bad to find a single advocate to defend it; it has at the same time been so universal, that we do not recollect a single system of any value that has escaped so hard a fate. The abuses, that have been made of the system of the motions of the planets, we have just now spoke of: And, though the great author of that system certainly could not but foresee, that his work might not altogether escape the common fate, it is with regret, however, that we find even this great man was a little off his guard: He himself,

though with modesty and diffidence, put the fatal question, which opened a wide door to all the abuses that have since disgraced so great a department of human knowledge. His query about a subtile elastic æther pervading the universe, and giving motion and activity to another supposed part of nature, an inert and unactive part, and thereby proving the cause of attraction, gravitation, and indeed of all the active phenomena in nature, was immediately laid hold of by his followers, as a fact sufficiently supported, because it seemed to have the sanction of so great an authority, and therefore well accommodated to the purposes of a fundamental principle, and that also to the infinite extent of application, to which it has been variously strained and perverted.

THE unphilosophical practice of neglecting all inquiry into the simple phenomena of nature, and of prosecuting the scrutiny into abstract causes through all its boundless fairy regions, had always been too pre-

valent in every department of knowledge ; as is sufficiently proved by the abuse of Epicurus's System of Morals, in the explanations and disorderly lives and principles of his followers ; by the misrepresentation of the doctrines of Socrates, in the mysterious enthusiasm of even the celebrated Plato ; by the systems of false physiology and pathology, that derived their unnatural birth from the very respectable discovery of the circulation of the blood ; by the extension of the antiphlogistic regimen to all diseases, in consequence of the discovery of its utility in a very few, by Dr. Sydenham ; and by the wild and mistaken applications, that have been made in every part of the study of nature, but especially in medicine, of the practice of reasoning by induction, substituted by Lord Verulam in place of that by syllogism, according to the old logic of Aristotle : All these, as well as many other instances that might be adduced, but too clearly prove the pernicious effects that abstract reasoning had introduced into every part of knowledge.

BUT instead of the better philosophy that might have been expected from the august directions in the *Novum Organum*, as well as from the execution of these in the principles of Newton ; no sooner was the query about aether, which we mentioned, assumed as a fact, than the avidity of this sort of false reasoning broke out into downright rage. Every thing was now explained by an aether. Not contented to confine their hypothesis to the explanation of attraction, connecting the system of the planets, and sustaining the harmony of their motions ; the chemists took hold of it, and applied it in explanation of the attraction between the constituent particles of small masses of matter, and made it the cause of the mutual cohesion of these, as well as of all their other properties.

THIS new principle, so assumed and so extended in its applications, was yet further extended, so as to be made the cause of repulsion as well as attraction : And now attraction, not as Sir Isaac Newton seriously

conceived it, that is, independent of all explanation, as a something that connected the energy to which the planetary system owed their regular and uniform motions; but as depending upon the cause and mode of operation, which they had fancifully attributed to the supposed universal aether, was fixed upon as the cause, not only of the properties of dead, but of the functions of living matter, over all nature, dead or alive, animated or inanimated, throughout the universe. It was not only the cause of the motion towards a level, which distinguishes the flow of water and other inelastic fluids, but of the seeming recess of the particles of matter from each other, that occurs in vapour and other elastic fluids. It was the cause of diffusion, as in the loose mixture that takes place between water and oil; it was the cause of solution, as in the closer and homogeneous mixture that takes place between water and salt, water and alkahol; it was the cause of that mixture, where the ingredients lose their distinguishing proper-

ties, and produce a body distinguished by properties quite different from both, as in the union of an acid with an alkali ; it was the cause of fermentation, or that process of the action of bodies upon one another, where a small particle of matter, imperceptible to our senses, assimilates a large mass of a given fluid into its own nature, or multiplies itself ad infinitum. The universal aether, regulating and modifying attraction through all the modifications of its processes varied without end, at one time produces acetous, at another vinous or saccharine, at another putrid, fermentation. The same over-ruling power was now supposed to produce the fermentation peculiar to the small pox ; now that accompanying the measles ; now the further modification of the process, as it distinguishes either the plague by boils, buboes, and carbuncles, or the putrid typhus fever by spots, petechiae, and vibices. It was the cause of the symptoms of disease both in their morbid and convalescent tendency. It was the cause of the healthy functions of ani-

mals, either in sense, motion, intellectual operation, or passion and emotion. Nay, such was the maniacal influence of this vague and ridiculous hypothesis, that the ultimate explanation of every question in every part of natural knowledge, that had been given up upon every other hypothesis, was referred to it, and thought happily explained by it. Let any question, for example, be put, as what is the cause that sheep have sometimes horns? The answer is ready: It is because the aether is sometimes so modified in its operation as to produce that effect. Why have other sheep no horns? It is owing to another modification of the aether. The same is the answer why a crow is commonly black; a swan white, with black feet; why fishes have scales; birds wings; some animals two feet; others four; others more; others none. The application of the same handy and pliable proposition to the explanation of muscular motion is truly diverting. To explain the contractions that take place in this sort of living matter, it was said, that

the aether, accumulating around, and without the ultimate particles, of which the gross mass of this sort of matter is composed, so affected these as to make them approach closer to each other. Approximation, therefore, of the ultimate particles or of the atoms of Epicurus, (for we have here hypothesis upon hypothesis,) being admitted as a very ingenious account of a phenomenon in living nature, that no man in his senses would, or does, pretend to explain; the next question was, How was the relaxation of the same living fibres to be explained? Here there could be no difficulty: For, as the problem about contraction was so easily made out, and as that was owing to the energy of the aether acting from without, and driving or impelling the particles into closer contact with each other; so it followed of course, that the same wonderful subtile fluid, now changing its place, and flowing into the pores, and between the particles or atoms, pushed the latter asunder, and increasing the spatula of the pores, or little spaces that they

were supposed to occupy, gave the whole gross mass of each fibre an enlargement of dimension, whether in a longitudinal or circular direction.

THE functions of the nervous system of man as well as other animals, exercised in sense, motion, intellectual operation, passion and emotion*, had, at different times, in the annals of medicine, undergone different explanations. Most of these, as well as that which makes our present subject, were purely hypothetical, and destitute of all support either from fact or argument. The hypothesis, immediately preceding the present one, was, that a fluid was secreted in the brain, and from thence by the nerves propagated to all the parts of the system, where there were either organs of sense or motion. The nerves were first supposed to be hollow, as any other part of the vascular system, and the fluid contained in them was therefore understood to be inelastic, like all the other grosser fluids from which it was supposed to be an ulti-

* Brun. Elem. Medicin. XV.

mate secretion. This theory, elegantly executed by the learned and ingenious Dr. Boerhaave, in his once much admired system of an intertexture of vessels, held its place in the medical creed so long as the living authority of that great professor, and the belief in an assertion of Lieuenhoek, that he had discovered by microscopical observation, that the nerves were hollow tubes, remained to give it support: But, when repeated observations of this sort, both by Lieuenhoek and others, brought no confirmation of the hollow structure of nervous matter; when the fallacy of microscopical observation came to be coolly considered, and the death of Dr. Boerhaave, soon after succeeded by the adoption of the spasmodic system of Dr. Hoffman in the young medical university of Edinburgh, was followed by a gradual declension of the eclectic system of that great man: Among other insignificant and frivolous alterations in physiology and pathology that now took place in medical doctrine, the substitution of an elastic for an inelastic fluid in the

nerves ; and the rejection of their hollow vascular structure, was one.

THE doctrine of spasm, started by an original very worthy of it, the fanatic and visionary Van Helmont, and heavily wrought up into a confused and perplexed system by the painful and verbose labour of the truly Germanic Hoffman, after having been, by the superior name and authority of Dr. Boerhaave, suppressed, and banished from the country which gave it birth, found at last, amidst a new persecution raised against it by the pupils of Boerhaave, (then in possession of the medical chairs at Edinburgh) a friend and protector in Dr. Cullen, who had lately become one of the number of those professors.

THIS brat, the feeble, half-vital, semipro-duction of phrenzy, the starvling of strained systematic dullness, the forlorn out-cast of the fostering care to which it owed its insect vitality, was now to be pampered by a crude and indigestible nutriture, collected from all

the materials which had composed the several fabrications of former erroneous systems; was to be decorated with every foreign plumage, and in this its totally borrowed and heterogeneous form, instead of the hideous caracatura, which it was, contrived to excite the derision of mankind, it was to be ostentatiously obtruded upon the world as a new and respectable doctrine, and held up, forsooth, as the formidable rival of a splendid system. Among other parts of this patched-up fabric, the aether was laid hold of.

FROM a manuscript dissertation on aether, first read before a literary medical society in Glasgow, and afterwards translated into Latin, and published by authority, in Edinburgh*; the complete systematic application

* This made its appearance about fifteen years ago, and was refuted in a masterly and philosophical manner by a person whose name we forbear to mention, because we have not his permission for it. That paper constitutes the article of aether in the first edition of the *Encyclopædia Britannica*. But the professorial influence of the original Author of this stuff has excluded all mention of it, as well as this criticism upon it, from the new edition of the work we have mentioned.

of aether to the doctrine of medicine was attempted. The notion of the hollow structure of nervous matter, and of an inelastic fluid secreted in them, was refuted, and the supposition of a solid structure of the nerves, with a subtile elastic fluid moving in their particles, on these, and around them, was adopted. Sense, motion, and betwixt these, the exercise of the intellectual function, as well as that of passion and emotion, were explained. To illustrate this by an example: Suppose an impression made upon any part of the external surface of a man's body, let that be either heat or cold, or any mechanical impulse: The aether in the extremities of the nerves, as organs of sense, is immediately set in motion: This motion, from the energy of the aether, is communicated along the nerves to the brain: The effect of the operation of the aether on the nervous substance of the brain is to produce such a change of motion, as occasions a consciousness of the original impression, and a reference in the mind to the place where it

was made. Next, if the impressiion was of a violent kind, as in the case of the application of a red hot iron, of an extreme degree of cold, or of an impressiion made by any sharp-pointed, or otherwise wounding instrument; the motion of the aether is instantaneously propogated along the nerves that terminate in the fibres of muscles, called therefore motory nerves, and the whole limb, in any part of which the hurting impulse had been received, is thrown into action, whereby it is withdrawn from the offensive power. But a fuller account than it is necessary for me to give will be afforded by inserting, in the author's own words, an extract of the dissertation we just now spoke of.

“AETHER, the name of an imaginary fluid, supposed by several authors, both ancient and modern, to be the cause of gravity, heat, light, muscular motion, sensation, and, in a word, of every phenomenon in nature. Anaxagoras maintained that aether was of a similar nature with

fire; Perrault represents it as 7200 times more rare than air; and Hook makes it more dense than gold itself. Whoever has an inclination to know the various hypotheses concerning aether, may consult Shebbere, Perrault, Hook's posthumous works*."

"BEFORE the method of philosophizing by induction was known, the hypotheses of philosophers were wild, fanciful, ridiculous. They had recourse to aether, occult qualities, and other imaginary causes, in order to explain the various phenomena of nature: But since the days of the great Lord Verulam, who may be styled the parent of genuine philosophy, a contrary course has happily been followed. He convinced the world, that all knowledge must be derived from experiment and observation; and that every attempt to investigate causes by any other means must be unsuccessful. Since his time, the best

* Act. Erud. Lips. 1716, Bernouilli's Cogitat. de gravitate aetheris, &c. &c.

philosophers have followed the tract which he pointed out. Boyle, Locke, Newton, Hales, and a few others, in little more than one century, have improved and extended science far beyond what the accumulated force of all the philosophers since the creation had been able to effectuate: A striking proof both of the comprehensive genius of Bacon, and of the solidity of his plan of investigation*.”

“NOTWITHSTANDING the reputation of Sir Isaac, philosophers have generally looked upon this attempt as the foible of a great man, or, at least, as the most useless part of his works; and accordingly pursue it rather as a dream or romance, than as having any connection with science. But we are sorry to find, that some late attempts have been made to revive the doctrine of æther, particularly in a dissertation *De ortu animalium caloris*, published in May last.”

* Our Critic is rather too partial to modern science.

“As the revival of an old doctrine becomes in some measure a new one, we shall plead no other apology for inserting a specimen of the method of reasoning employed in this dissertation.”

“THE author makes frequent use of a species of argument termed *dilemma* by logicians. For example, in the first part of the work, after endeavouring to prove that animal heat cannot be owing to fermentation, the motion of the fluids, and other causes that have usually been assigned, he draws this conclusion:—“If none of these causes are sufficient to produce the effect; therefore, by dilemma,” says he, “it must be sought for in the nature and action of the nerves.”—This is a new species of dilemma:—If the author had proved, that the cause of heat in animals could not possibly exist *any where*, but *either* in fermentation, the motion of the fluids, &c. *or* in the nerves, after having disproved its existence in all the rest, his conclusion in favour of the nerves

would have been just; but, as he has not so much as attempted this, the conclusion is not only false, but ridiculous.”

“HOWEVER, upon the authority of this dilemma, the author first gives what he calls a Compend of a *new* doctrine concerning the nerves, and then proceeds to inquire in what manner the nerves produce animal heat: He tells us, “That
“*thought (cogitatio)* and sensation depend
“upon impulses either on the extremities
“of the nerves, or the sensorium commune, and the consequent motions produced by these impulses: That these motions are so quick, as to be almost instantaneous: That as all motion is mechanical; therefore *thought*, sensation, and muscular motion, must likewise be mechanical: That such quick motions cannot be produced without the intervention of some extremely elastic power; and, as Sir Isaac Newton has shown, that the impulses which occasion the different sensations must be owing to an elastic

“ power; therefore the muscular motions
“ of animals must be occasioned by the
“ oscillations of some elastic power.” But,”
says he, “ as this elastic power cannot ex-
“ ist in the solid nervous fibres, nor in any
“ inelastic fluid; therefore, by *dilemma*,
“ it must exist in an elastic fluid; and
“ hence also, by the former *dilemma*, this
“ elastic fluid must be seated, either in the
“ nerves, or in the medullary substance.”

“ HERE again the author calls Sir Isaac
into his assistance*. “ What confirms this
“ opinion,” says he, “ is the Newtonian
“ aether, which pervades all nature, and
“ which, with a few variations in its mo-
“ dification, Sir Isaac has shewn to be the
“ cause of cohesion, elasticity, gravity, elec-
“ tricity, magnetism, &c. in the following
“ manner: 1. As the rays of light, when
“ reflected, do not touch the solid parts of
“ bodies, but are reflected a little before

* Wherever either our Critic, or his Author, mentions the
word Sir Isaac, read for it, “ the followers of Sir Isaac.”

“ they reach them, it is plain that the
“ aether not only fills the pores of bodies,
“ but likewise floats upon their surfaces;
“ and hence it becomes the cause of at-
“ traction and repulsion.—2. All metals,
“ and inelastic fluids, are non-electrics; on
“ the other hand, all solid bodies, metals
“ excepted, are electrics, *i. e.* proper for
“ accumulating aether. But aether, thus
“ accumulated in such a variety of bodies,
“ may produce various motions in the
“ parts of these bodies, without inducing
“ any change in the bodies themselves.
“ Hence aether, with some variations in
“ its modification, is sufficient to account
“ for all the phenomena of electricity.—
“ 3. As iron, by accumulating aether a-
“ round it, exhibits all the wonders of mag-
“ netism; so this magnetical aether is
“ more analogous to the nervous aether of
“ animals than any other kind of it. For,
“ as the magnetical aether passes along
“ iron without changing any part of the
“ iron; so the nervous aether, in like man-
“ ner, passes along the medullary sub-

“ stance of the nerves, and excites motion
“ in any part that is continuous with
“ them, without inducing any change in
“ the nerves.—4. The irritability and life
“ of plants, which very much resemble
“ those in animals, cannot be explained by
“ any inelastic cause, and must therefore
“ be attributed to an aetherial one.—Lastly,
“ As the common aether is differently mo-
“ dified in each of the substances above ta-
“ ken notice of, and also produces various
“ motions or effects peculiar to each, it
“ likewise varies and has some peculiar
“ qualities when residing in animal bo-
“ dies; so that the nervous or animal aether
“ is not exactly the same, but differs in
“ some respects from those species of aether
“ which give rise to cohesion, gravity, mag-
“ netism, electricity,” &c.

“ HAVING thus explained the nature and
qualities of aether, our author starts a very
important question, *viz.* “ Whence is
“ aether derived? and whether does it
“ leave any body after having got posses-

“ sion of it?” In answer to this, he observes, “ That certain bodies have the
“ power of collecting the electrical matter
“ from every circumjacent body, and of
“ accumulating it in their pores and on
“ their surfaces, but do not suffer it again
“ to transmigrate into any other body.
“ There are other substances of an opposite
“ nature, which do not accumulate the
“ electric matter, but instantly allow it to
“ pass into others, unless prohibited by
“ an electric. Hence,” says he, “ nothing
“ more is necessary for substances of the
“ former kind, but to be in such circum-
“ stances as allow them to accumulate the
“ electric matter. In the same manner,”
proceeds our author, “ the nervous æther,
“ which is diffused through every part of
“ nature, flows copiously into the medul-
“ lary part of the nerves, when no obstacle
“ stands in its way ; but, when once it has
“ got there, it keeps firm possession, and
“ never afterwards leaves it. Now,” says
he, “ a quantity of æther probably con-
“ stitutes one of the staminal parts of ani-

“ mal bodies, and increafes in proportion
“ to their age and growth : For nothing is
“ is more *ridiculous* than to fuppofe that
“ what is commonly called *the nervous fluid*,
“ can be daily wafted by labour and exer-
“ cife, and daily repaired by a new fecretion
“ tion from the brain. To refute this *vul-*
“ *gar* notion, nothing more is neceffary
“ than to fay, That it is *one of Boerhaave’s*
“ *theories*, and *muft be false*, as all Boerhaave’s
“ other theories have been proved to be ill
“ founded ! But aether is of a more fixed
“ and determinate nature ; whenever *it*
“ gets poffeffion of any fubftance, it never
“ forfakes it, unlefs the texture and confti-
“ tution of the body itfelf be changed.
“ Hence,” continues our author, “ the
“ aether of an acid body remains as long
“ as the body continues to be acid ; the
“ fame obfervation holds with regard to
“ the aether of an alkaline body : But, if
“ thefe two be blended together into a
“ neutral falt, the aether muft likewise be
“ changed into a *neutral* ; and therefore, in
“ the formation of the medullary or ftami-

“nal part of animals, the aether which be-
“fore belonged to, or had the properties
“of some other substance, is instantane-
“ously changed into animal aether, and
“remains so till the dissolution of that ani-
“mal.”

“OUR author next observes, “That bo-
“dies require to be in a certain state or
“condition in order to the formation
“of an aether that is proper for them.
“This condition of bodies is called an *ex-*
“*cited state*: Thus, as sulphur, when fluid,
“does not receive the electric matter, but,
“when solid, instantly receives it; in the
“same manner, the nerves, though pro-
“perly formed, do not admit an aether
“adapted to their nature, unless they be
“in an excited state. Hence,” says he,
“the aether of a *dead*, and that of a *living*
“person, are very different, although the
“texture and figure of the nerves be the
“same. The state necessary for constitu-
“ting the aether of a living animal, seems
“to depend on heat and moisture; because

“ these things are absolutely necessary in
“ in the constitution of life: And hence,”
concludes our author, “ the excited state
“ of the nerves depends on heat and moist-
“ ture. There are also certain circumstan-
“ ces,” says he, “ which contribute to ren-
“ der the state of the nerves more or less
“ apt for accumulating æther: A spasmodic
“ fever, for example, render the nerves
“ of the whole body less pervious to the
“ motion of the æther; and hence, in cases
“ of this nature, *health*, and all the *vital*
“ *functions*, must be injured,”

“ THESE,” our author observes, “ are
“ the outlines of a *new* doctrine concerning
“ the nature and functions of the nerves;”
“ and upon this *foundation*, proceeds to give
“ his *new theory* of animal heat.

“ FROM the foregoing *reasoning*,” says he,
“ the heat, as well as all the functions of
“ animals, seem to be occasioned by the
“ oscillations of the nervous æther, betwixt
“ the extremities of the sentient nerves and

“ the brain, or, more properly, betwixt the
“ brain and muscles. But electrical aether,
“ as above observed, varies a little from
“ common aether; all inelastic fluids, as
“ was likewise formerly remarked, are
“ non-electrics; and all solid bodies, metals
“ excepted, are electrics: These circumstances,” says our author, “ seem
“ to be owing to the oscillations of the electric
“ matter in bodies. In the same
“ manner,” says he, “ the nature of animals
“ may be such, and the nerves may
“ be so constituted, as to form an aether
“ adapted to their nature, and to excite
“ those oscillations which occasion heat. The
“ wonderful effects of heat and cold upon
“ the nerves,” continues our author, “ confirm
“ this theory: Every action, and
“ even life itself, requires a certain degree
“ of heat; for, as the heat of the external
“ air is so variable, it was absolutely necessary
“ that animal bodies should be endowed
“ with the faculty of producing a
“ degree of heat suited to their nature, independent
“ of external circumstances :

“ Hence we see the reason why the degree
“ of heat so seldom varies in the same spe-
“ cies of animals. However, although the
“ nervous æther is always ready for excit-
“ ing heat by its oscillations; yet, in order
“ to bring about this effect successfully,
“ external *stimuli* are necessary, otherwise
“ the æther would be in danger of *stagna-*
“ *ting*, which would occasion sleep, a palsy,
“ and, last of all, death. The most perma-
“ nent of these *stimuli* is the pulsation of
“ the arteries; which is the reason why
“ heat is so connected with the circulation
“ of the blood, and why many authors
“ have mistaken it for the true cause of ani-
“ mal heat.”

“ OUR author now concludes with ob-
serving, “ That by his theory, the varieties
“ of heat in different parts of the body, the
“ heat and flushing of the face from shame,
“ and all the other phenomena of heat in
“ animal bodies, admit of a better explana-
“ tion, than by any other theory hitherto
“ invented.”

“HAVING thus given a pretty full account of an attempt to explain the most abstruse operations of nature, as nearly as possible, in the very words of the author, we cannot deny ourselves the liberty of making a few observations.”

“To give a formal refutation of this author’s reasoning, is no part of our plan. It is, perhaps, wrong to say that he has *reasoned*; for the whole hypothetical part of his essay is a mere farrago of vague assertions, non-entities, illogical conclusions, and extravagant fancies. His aether seems to be an exceedingly tractable sort of substance: Whenever the qualities of one body differ from those of another, a *different modification of aether* at once solves the phenomenon. The aether of iron must not, to be sure, be exactly the same with the nervous aether, otherwise it would be in danger of producing sensation in place of magnetism. It would likewise have been very improper to give the vegetable aether exactly the same qualities with those of animal aether;

for, in such a case, men would run great risk of striking root in the soil, and trees and hedges might eradicate and run about the fields. Nothing can be more ludicrous than to see a writer treating a mere *ens rationis* as familiarly as if it were an object of our senses : The notion of compounding the aether of an *acid* and that of an *alkali*, in order to make a *neutral* of it, is completely ridiculous. But if men take the liberty of substituting *names* in place of *facts* and *experiments*, it is an easy matter to account for any thing.”

“ By this method of philosophizing, obscurity is for ever banished from the works of nature. It is impossible to gravel an aetherial philosopher. Ask him what questions you please, his answer is ready: “ As we cannot find the cause *any where* “ else; ergo, by dilemma, it must be owing to aether !” For example, ask one of those sages, What is the cause of gravity? he will answer, ’Tis *aether*! Ask him the cause of *thought*, he will gravely reply,

“ The solution of this question was once
“ universally allowed to exceed the limits
“ of human genius: But now, by the grand
“ *discoveries* we have lately made, it is as
“ plain, as that three and two make five:
“ *Thought* is a mere *mechanical* thing, an
“ evident effect of certain motions in the
“ brain produced by the *oscillations* of a
“ subtle elastic fluid called *aether*!” This
is indeed astonishing!”

“ SUCH jargon, however, affords an excellent lesson to the true philosopher. It shows to what folly and extravagance mankind are led, whenever they deviate from experiment and observation in their inquiries into nature. No sooner do we leave these only faithful guides to science, than we instantly land in a labyrinth of nonsense and obscurity, the natural punishment of folly and presumption.”

“ WHEN endeavouring to account for that propensity in the human mind which prompts us to attempt the solution of

things evidently beyond our reach, we recollect a passage in Swift's works, which explains it in the most satisfactory manner."

"LET us next examine, says the Dean, the great introducers of new schemes in philosophy, and search till we can find from what faculty of the soul the disposition arises in mortal man, of taking it into his head to advance new systems, with such an eager zeal, in things agreed on all hands *impossible to be known*; from what feeds this disposition springs, and to what quality of human nature these grand innovators have been indebted for their number of disciples; because it is plain, that several of the chief among them, both *ancient* and *modern*, were usually mistaken by their adversaries, and indeed by all except their own followers, to have been persons crazed, or out of their wits; having generally proceeded, in the common course of their words and actions, by a

“ method very different from the vulgar
“ dictates of *unrefined* reason, agreeing,
“ for the most part, in their several models,
“ with their present undoubted successors
“ in the *Academy of modern Bedlam*. Of this
“ kind were *Epicurus, Diogenes, Apollonius,*
“ *Lucretius, Paracelsus, De Cartes,* and o-
“ thers; who, if they were now in the
“ world, tied fast, and separated from their
“ followers, would, in this *undistinguishing*
“ age, incur manifest danger of *phlebotomy,*
“ and *whips,* and *chains,* and *dark chambers,*
“ and *straw*. For what man, in the natu-
“ ral state or course of thinking, did ever
“ conceive it in his power to reduce the
“ notions of all mankind exactly to the
“ same length, and breadth, and height with
“ his own? Yet this is the first *bumble* and
“ *civil* design of all innovators in the empire
“ of reason.—Now, I would gladly be in-
“ formed, how it is possible to account for
“ such imaginations as these in particular
“ men, without recourse to my *phenomenon*
“ of vapours, (*i. e.* aether,) ascending from
“ the lower faculties to overshadow the

“ brain, and there distilling into concep-
“ tions, for which the narrowness of our
“ mother-tongue has not yet assigned any
“ other name besides that of *madness* or
“ *phrenzy*. Let us therefore now conjec-
“ ture how it comes to pass that none of
“ these great projectors do ever fail pro-
“ viding themselves and their notions with
“ a number of *implicit disciples*; and I think
“ the reason is easy to be assigned.—For
“ there is a peculiar string in the harmony
“ of human understanding, which in feve-
“ ral individuals, is exactly of the same
“ tuning. This, if you can dextrously *screw*
“ up to its right key, and then *strike gently*
“ upon it, whenever you have the good
“ fortune to light among those of the *same*
“ *pitch*, they will, by a secret necessary
“ sympathy, strike exactly at the same
“ time. And in this one circumstance lies
“ all the *skill* or *luck* of the matter: For if
“ you chance to jar the string, among
“ those who are either above or below
“ your own height, instead of subscribing
“ to your doctrine, they will *tie you fast*,

“ call you *mad*, and *feed* you with *bread* and
“ *water*. It is therefore a point of the
“ nicest conduct, to distinguish and adapt
“ this noble talent with respect to the dif-
“ ference of *persons* and of *times*.—For, to
“ speak a bold truth, it is a fatal miscarriage
“ so ill to order affairs as to pass for a *fool*
“ in one company, when in another you
“ might be treated as a *philosopher*: Which
“ I desire *some certain gentlemen of my acquaint-*
“ *ance* to lay up in their hearts as a very
“ *seasonable innuendo*.”

“ WE would not have dwelt so long up-
on this article, had it not been to guard, as
far as our influence extends, the minds of
those who may be unacquainted with the
genuine principles of philosophy, from be-
ing led into a wrong tract of investigation.”

IT was the full conviction of the neces-
sity of stopping our inquiries where our
knowledge ends, and of acquiring a tho-
rough acquaintance with the particular
phenomena, before making any attempt to

generalize and reduce the whole to a common head, together with a deep sense of the pernicious consequences of the contrary method of philosophizing, that of neglecting the detail of facts, and almost only indulging in vain speculation and idle inquiry into abstract causes, that gave occasion to the XVIII paragraph in the second edition of the *Elementa Medicinæ*; a paragraph not so much as thought of in any part of the first edition, as being then supposed unnecessary. From the recollection of what had happened to other departments of science, which has now been so fully pointed out, as also from the importunity of his pupils, not yet sufficiently apprised of the danger they were pressing upon, to know something about the cause of excitability, the author found himself obliged to set the marks and fix the boundaries of inquiry. His words are as follow: “ We know not what excitability is, “ or in what manner it is operated upon “ by the exciting powers: But, whatever it “ be, either a certain quantity, or a cer-

tain energy of it, is assigned to every individual system upon the commencement of its living state. The measure of the energy, or quantity, is different in different animals, and in the same animal at different times, and under different circumstances." In the margin he makes an apology for these terms of quantity, energy, and measure of either, as also of overproportion, underproportion, &c. as being less eligible for their propriety, than from the necessity for their use. And then he adds, "therefore, partly on account of the uncertain nature of the thing, partly from the poverty of common language, as well as the novelty of this doctrine, the occurrence of the expressions of overabundant, excessive, or accumulated excitability, when enough of stimulant power has not been applied, as well as their opposites, deficient, exhausted, or wasted excitability, when too much stimulant power has been applied, will be frequent through the subsequent work. Both

“ upon this, as well as every other occa-
“ sion of philosophic inquiry, we must
“ abide by facts. The slippery question
“ about causes, as being generally above the
“ reach of our powers, that poisoned snake
“ to philosophy, must be carefully shunned.
“ Let no one, therefore, think himself at li-
“ berty to explain the terms, that we have
“ just now mentioned, as glancing at the
“ nature of excitability; or as implying a
“ decision of the question, whether it be
“ material, and, as such, one while in-
“ creased, another while diminished in
“ quantity; or only a quality inherent in
“ matter, and sometimes in a vigorous,
“ sometimes in a languid state. On the
“ contrary, let every person be assured,
“ that the abstract question is in no shape
“ attempted; a practice that has been too
“ common, nay almost constant, in other
“ systems, to the great detriment of
“ science*.”

* Elem. Med. Alter. Edit. XVIII.

It is not our business in this part of our work to enter into a minute detail of particulars, or even to delineate all the modes of corrupting otherwise meritorious doctrines: They are numerous, almost innumerable. As many of them, however, as shall seem worthy of any notice, will be the subject of inquiry in the after part of this work, where they are to be treated in the order already mentioned. In the aether we have been speaking of, we have given sufficient exemplification of the bad effects of the practice; and it will easily occur to the reader how frequent and baneful to science it has been. It had been long known, that bodies heavier than the medium in which they are placed, descend with a velocity equally accelerated: But the cause was unknown, till Galileo discovered it; in finding that all bodies, once put in motion, continue that motion with the same velocity, and in the same direction, till they be retarded, or brought to rest, or have the direction of their motion altered, by a corresponding force impres-

fed ; and, that gravity acts constantly and equally, and therefore adds equal degrees of velocity in equal times. The most sound philosophers since his time, have not only allowed these facts to be real causes, but adequate to produce all the effects ascribed to them: And, though others, unwilling to consider them as ultimate facts, or limits of human knowledge, have exhausted much useless learning and ingenuity to discover their cause ; their success has been such as we have pointed out: And the cause of gravitation is still unknown, and, we have no doubt, will remain unknown, so long as conjectures continue to be admitted for facts, and hypotheses for arguments.

As the ensuing part of this work is meant for an exposition and refutation of the several erroneous systems that have at any time appeared in the profession of medicine ; therefore, before entering upon it, and dismissing the present introductory part, it will, we apprehend, be produc-

tive of some use, to give a general account of a doctrine, which we consider, and hope the readers will receive, as a just one. It will answer the purpose of a standard, by which the several systems that are about to be disproved, may be severally compared and examined.

BUT, previous to that, that some notion may, in the mean time, be formed of the most interesting and important difference betwixt the old doctrines and the new, we shall, to the account of the new doctrine just now mentioned, prefix an outline of the old, especially in the practice, in so far as that can be brought to a general view,

A short Account of the old method of Cure.

IF the erroneous systems of medicine, that have hitherto appeared in the world, could be reduced to any general point of agreement, it would be in the general view that physicians, however different their theories were, have entertained of the method of cure. In that respect, nothing can be more uniform than they, in placing their practice in bleeding, other evacuations, starving, and cold. This is the noted or rather notorious, doctrine of antiphlogistic regimen or antiphlogistic plan of cure: Which, without exception, scarcely that of the physicians who opposed the practice of Dr. Sydenham, commonly known by the appellation of the Alexipharmac physicians, has been nearly universal from the first accounts we have of the profession, in the works of Hippocrates, to the present time. For, however widely physicians have differed in their anatomical, physio-

logical, and pathological, opinions, which were their theoretical department; or, however much some of them have differed from the rest in decrying all theories, there is, with the exception we just now hinted, and not with that completely, scarce a practitioner upon the records of the profession, who has not prescribed bleeding, vomiting, purging, sweating, glistering, blistering, issues, tents, perpetual blisters, abstinence from every nourishing article of food, from every sort of invigorating drink, from all condiment; substituting, in place of the latter articles, vegetable stuff in a fluid form, as water-gruel, grot-gruel, panado, acidulated or not acidulated; obstinately denying the use of all animal matter, even in a fluid form, excepting, and that only of late, and yet sometimes only, beef tea, consisting of water poured boiling upon beef, and strained off again. In a word, there is not a mode of evacuation, or of impoverishing the several parts of the vascular system of their respective fluids, that the brains of

practitioners have not been tortured to contrive and employ. Hence, besides large bleedings from the great red vessels, and the great evacuations of all the several colourless fluids, secreted from the blood, every species, every mode of bleeding, every diminution of the mass of the other fluids, as leeching, cupping, scarifying, expectorating, sternutation, rubefaction, have been constantly employed.

FROM this uniformity among physicians in their practice for the cure of all general diseases, independent of their pathologies; from this gross rule of practice, independent of their numerous proximate causes, as well as their more numerous indications of cure, both equally jarring and varying without end, we can form a tolerable estimate of their notion of the nature of diseases in general, and, without doing them the least injustice, conclude, that hitherto physicians have, in fact, had no idea of any other morbid state but a phlogistic one, or one depending upon excessive

vigour; and no conception of any other mode of cure, but an antiphlogistic, or evacuant, debilitating, one: A notion repugnant to all human experience; which infallibly teaches us, that our tendency is to disease and death, while our living and healthy states are effected and continued by powers foreign to our natures*. Our very food and drink and other supports of life, after producing that effect, for a certain period of our living state, come at last gradually to operate more and more weakly, and at last to fail altogether, and allow death to finish our decaying state in a total extinction of it †. If, therefore, there

* Elem. Med. LXXII. “From all that has been hitherto delivered, it follows as a demonstrated fact, that life is a forced state, that animals, every instant of time, tend to death, and are kept from it difficultly, and only for a little, by foreign powers, and then give way to death from the necessity of their fate.”

† “What, during the first part of life, is the effect of food, drink, and other similar supports of life? It is to give strength. What is their effect after? To give less and less strength? What is their effect towards the end of life? It is so far from being productive of strength, that it manifestly is debilita-

was any foundation for the supposition, that the supports of life sometimes overdo their part, which is certainly the case, especially when the growth is finished, and the powers are so applied, as to produce a high luxuriance of health; at other times, however, especially in the decline of life, and at every period of it when the powers are applied in an underproportion, it required no extraordinary judgment to discern a very opposite state of the system, a state of debility, and that the diseases, arising upon such occasions, could arise from no source but debility. Nay, while the fact is ascertained beyond a doubt, that there are two sources of debility, one, the consequence of an underproportion, and the other, of an overproportion of stimulus, the latter going beyond that more moderate proportion, which constitutes the diseases of a high luxuriance of health; and, while it is

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ting. Nay, while the same means, by which life was formerly supported, are not withheld, life, notwithstanding, and for the most part, through the intervention of diseases, is at last brought to an end." *Elem. Med. Praef. p. 2. ima.*

also demonstrated, that the diseases from the latter source equally depend upon debility, as those originating from the former*, it certainly might have been expected, that, in the course of more than two thousand years, both those sources of debility should have been marked, as constituting a set of diseases, not depending upon causes of excessive vigour, and therefore not to be cured by remedies that diminish inordinate vigour; but depending upon a morbid deminution of vigour, and therefore to be removed by powers that increase the deficient vigour†. But, though the diseases of debility from either of these sources, are, in the catalogue of the sum total of universal diseases, in the proportion of ninety-seven out of the hundred, to the diseases that are properly treat-

* See No. XXIII. and XXVIII. to XXXVIII. where the debility depending upon overproportion is mentioned; and XXXVIII. to XLVII. where the full account of that debility, which depends upon underproportion, is explained; and both upon the proper principle.

† Elem. Med. XXIII. LXII. LXVI. LXVII. LXVIII. XC. XCI.

ed upon the commonly received plan of cure; yet, as if the latter were the only object of the physicians practice, and the former non-existents in nature; till a certain doctrine appeared, no other cause of disease had been looked for, but plethora and vigour, and no other cure employed, but bleeding, and other evacuant, debilitating powers, without end. The fair and obvious inference against physicians to be drawn from all this is, that, according to their creed, notwithstanding of the fall of man, the tendency of mankind is not to death, but immortality, and the only use of medicine is to counteract that tendency, and, by ensuring our mortal state, to enforce the curse denounced against the common parents of mankind and their offspring. Henceforth, at least, the bad effect of the ordinary practice, in the far greatest number of diseases, will not be doubted; as it already is not, wherever it has been properly inquired into, and compared with that, which, happily for mankind, is now taking place of it. If, however,

it should be said in favour of some one or other of the systems, the falsity of which has been unreservedly announced, that, since they are so different from each other in their theoretical part, one or more of them has a chance of being nearer to the truth in practice, in proportion to their difference from those, that are the most remote from that standard: The short answer to that allegation is, that their theoretical differences are only nominal, while the sameness of practice, that distinguishes them all, is real. The practice asserted to be in common to them all has been described; and the only question, therefore, that remains to prove them all to be essentially on the same footing of practice, resolves itself into this: Is there any one system, I will require but one, distinguished for greater justness in its practical part, than the rest?

HIEROPHILUS and Erasistratus are said to have improved upon the doctrine of their master Hippocrates, the one by enlarging the anatomical part, the other

that of the *Materia Medica*. But, who is so learned, or so much more fortunate than his neighbours, in lighting upon the proper vouchers of the fact, as to decide in favour of either that assertion or the contrary? It would seem rather, that as the fame of the Coan father remained undiminished by the labours of these his immediate followers, they left the practical part much as they found it. Next, though we have the works of the celebrated Galen, a leader in the profession of medicine, very complete, and, in which considerable alterations are made in the theoretical part; does it appear from the face of his system, that any difference of consequence, was introduced into the practice? This system, on the contrary, with the alterations we speak of in the theoretical part, continued, as it had been handed down from the time of Hippocrates, in all the hands into which it fell, Saracens or Europeans, and in all the languages in which it was perused, whether the original, or the Arabic, or Latin translations, through

all the dark ages, precisely the same. Nay, the opposition at last made to it by the chemical system of medicine, keen and acrimonious as that was, was followed with no material innovation in the kind of remedies. When the violence of party-spirit abated, and the torrent of mutual rage subsided into the more gentle stream of a temperate and calm opposition ; not only the more tractable and moderate chemical physicians, but even their outrageous leader Paracelsus, soon began to see the necessity of confining their new system to the speculative part of the art, and of leaving no further alteration in the practice, but the nominal one of changing the forms of some of the evacuant remedies, while their qualities remained the same. If the chemists found this a necessary compromise, and readily perceived the inefficacy of relying on acid remedies, to remove an alkaline cause of disease, or of trusting to powers of an alkaline kind, as remedies of an acid acrimony, constituting the morbid state : It was not to be expected, that the practitioners of

a kindred sect, the Corpuscularian Doctors, would, from a feeling of the same necessity to enlarge their basis of cure, hesitate in making similar terms with the Galenists. Accordingly, though their pathology taught, that the morbid state depended upon a sharp-pointed or angular form of the extreme particles of the blood and other fluids; and their indication of cure was, to restore to them that rotundity, which was supposed to constitute their healthy state; and though the practice of evacuation could only be supposed to dislodge a small portion of such morbid matter, without having any effect at all in giving the part, that remained in the system, the sphericity or rotundity of the ultimate particles, supposed requisite to the return of health; they did not, however, dispute the matter with the Galenists, but allowed themselves to be swept down the torrent of an undistinguishing method of cure, which, for so many ages, had carried all before it.

It was predicted by a great man, who lived to see the discovery of the circulation of the blood, that the explanation of medical doctrine would, for the future, turn upon that discovery. As his merit or demerit in that prediction, could only be determined, by knowing what use he expected should be made of that piece of knowledge, added to what knowledge had been acquired before; we therefore pretend not to make him the subject either of eulogy or censure on that account. But we are confident, that, if Hervey were to return to the earth, and observe what state of medicine had taken place ever since his discovery; he would be much more provoked by the abuse that had been made of that discovery, than he had been exasperated by the persecution raised against himself for making it. The volumes that have been wrote upon the absolute power of the heart and vessels; the effects attributed to the blood as a cause of disease, while the states of that fluid are always the effect of the true cause, a cause not thought of by them,

not even in a dream; the downright nonsense of assigning a projectility to the blood, *i.e.* a power of directing its own motion, independent of the influence of the vessels, which, while it is they that regulate its motion, are, at the same time, themselves governed by a power, that is one and the same over all, and the sole over-ruling principle*; all these erroneous doctrines, and their consequences, though introduced by great names, and credulously, from the enchantment of mere authority, swallowed by a world of implicit believers, would afford that great man little occasion for glorying in the beneficial effects that his discovery had brought to mankind; on the contrary, he could not fail to be highly mortified by the abuses, which the ignorance and perversity of human nature had made of it.

BE the causes, however, what they may, the discovery of the circulation made no

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* The excitement of the system produced by the exciting powers, operating upon the excitability, is the principle here alluded to. See Elem. Med. XVI. XXXII.

compensation by its good effects upon the practice of medicine, for the evils which the abuses of it introduced into the theory.

DR. SYDENHAM himself, notwithstanding the reformation, in other respects, that he made in the gross cures of some of the few phlogistic diseases, still knew only the evacuant plan of cure. And as Dr. Boerhaave's system was eclectic, that is, selected from both ancient and modern writings, and particularly from these of Dr. Sydenham, so the practice, which was the same in all the authorities he followed, remained the same with him and all his followers. And so little was there any variation in the curative part, as executed upon the spasmodic system, that any person, who hears or reads, without looking at the title or form of the book, any practical prescription in Hoffman, would not be able to distinguish it from one in the style of Boerhaave. The very doctrine of Sthaal, which pretended to rely, almost entirely, upon the power and wisdom of nature in

the cure of diseases*, whenever the interference of the physician was allowed, pointed out no other remedies, but the ordinary evacuant ones, while their doctrine of plethora, led them to encourage bleeding even more than others. And though Hippocrates, the author of that doctrine, in some puzzling cases, as bad fevers, often lay by, depending on an effort of nature; yet he often also lay to, as we equally know, from his writings. Their practice, therefore, whenever they engaged in it, consisted of the usual evacuant remedies. Indeed Hippocrates, from whose writings this, as well as almost all the errors of medicine are derived, knew no other mode of cure, but the one so generally followed ever since his time.

AFTER thus pointing out the sameness of the method of cure of diseases among physicians, however different their theories

* This is what is commonly called the *vis medicatrix naturae*, or that power in the constitution, by which it is supposed to remove the morbid tendency of the symptoms.

and systems were; it might seem but reasonable, and a part of the task we have undertaken, to take some notice of the medical practice, as that was conducted by two sets of practitioners, the Empirics and the Alexipharmac regulars.

WHEN we consider the heating stimulant articles, which distinguished the Alexipharmac practice, we would be disposed to think, that they had in view the cure of diseases, that depended upon a different cause from that of repletion and vigour. But we are soon set right in our judgment of this matter, by this single consideration, that their remedies, though drastic, and such as we have described, were both evacuant, and meant for such, as well as those employed by others. If the intention, or, as it is commonly called, the indication, of cure, which other systematics followed, was to throw out of the system certain humours, hurtful either by their quality or quantity; that of Dr. Morten, and his Alexipharmac brethren, was also to expel

humours of a hurtful quality, in so far as they were supposed to contain a morbid matter. Only, in the latter case, the force of the means often defeated the end; it being certain, that the stimulus, combined with their evacuants, often produced and increased the morbid state, which, as evacuant, they were intended to remove. This effect, however, of their remedies, hurtful indeed in phlogistic diseases, and justly as such rejected by Dr. Sydenham and his followers, administered in any of the numerous diseases depending upon debility, was so far suited to be of service. Nor is it improbable, that, contrary to their intention, which was to dislodge a morbid matter, they sometimes, upon a very different principle, gave relief to patients. But that would be too often frustrated by their general view of promoting evacuation. Upon the whole, as the diseases in which stimulants are of service, are ninety-seven out of the hundred, to those that require evacuation, it is very possible that the Alexipharmac plan of cure, though randomly

conducted, and contrary to right principle, did more service upon the whole, than the antiphlogistic evacuant one*. The intention, therefore, of the Alexipharmac practice was the same with that of the greatest part of the practice that either preceded or followed it, that is, to evacuate. And, if the articles they employed were more active and stimulant; the only difference that that made was, that the practice was so much worse in a few diseases, and might, according to its management, be so much better in many others.

FROM this account of the practice of the art of medicine, we can perceive that hitherto it has been altogether imitative, and considered as founded on fact, and sacred, without knowing the reasons why. For want of which knowledge, it neither has been, nor can be, better in the hands of the Empirics, than in those of the re-

* This distinction between the Sydenhamian or the present, and the Alexipharmac practice, is pointed out in the Elem. Med. from CCCC. to CCCCVII. Vol. 2.

gular physicians. The enterprising genius of empiricism might now and then stumble upon a more successful cure than the regular practice suggested, and it was so far in its favour, that ignorance could not mislead it more, than the false knowledge of its rival dogmatism. As the greatest distance from any point in a circle is one half the diameter, and, as such was the deviation from truth of the dogmatic practice, with the exception only of their gross method of cure of the small pox, and peripneumony, and one or two diseases beside; consequently, in all diseases except these, the Empirics had every chance of doing better than the dogmatists. But still, as ignorance and want of right principle, is no security for the attainment of solid knowledge in other cases; that it also is not in this, is proved by the history of empiricism from its first leader we know of, the Egyptian Serapion, down to Dr. Graham; where we find the only result of the means they pretended to employ, to attain the knowledge of

diseases, and of their causes, that is, observation, history and analogy, was vulgar and doubtful attestation; empty boasting; abuse of all other practice, not excepting that of their brethren in the same line; extreme narrowness of mind; contempt of candour and decency of character; no written records of what they did; the acquisition of not one person of learning, sense, or judgment, to their party; no united body in support of a common cause; no fixed plan but that of a plot upon the purses of their patients; no patients without purses; a judicious confinement of their depredations to the rich, credulous, vulgar. From such disqualifications, little improvement could be expected in any branch of medical knowledge, and as little in the great end of all such knowledge, the prevention and cure of diseases. The obstacles to improvement in the regular practice have been pointed out in general, and will be more particularly detailed hereafter. But if the profession is a gainful trade among the Empirics, it is not less so,

though better guilded over, among the regulars. The accomplishments of the regulars have been learning and ingenuity in a few*, not directed to improvement in their own profession, a mere shadow of learning, or the study of a bad kind of it†, in the greatest number; fly attention to reputation for skill; intriguing with their brethren for countenance; opposition to improvement; persecution of discovery; narrowness of mind, under the thin veil of a false pretention to liberality; affectation of decency; simulation of candour, all for the purposes of trade; silence, from a consciousness of inability to speak so as to gain by it, formality, pomp, stateliness, gravity, all making a motely group of absurdities in manner, that prove wonderful excitors of the risible muscles in men of sense; invincible attachment to the errors of their education; aversion to im-

* As in a Pitcairn, a Boerhaave, a Morgagni.

† As Botany, and the other branches of natural history, the infinite multiplication of articles of the *Materia Medica*, endless modifications of their composition in pharmacy, &c. &c.

provement; ready upon every the slightest occasion to break out into rage and transport; invincible bigotry and prejudice*; an over value of what learning they have any pretensions to; an under value of all that they are conscious they want†.

As every country, in proportion as it is distinguished by riches and openness of manners, for that very reason, becomes the emporium, the scene of action, for highway-

* “*Seniorum confirmatam aetate et usu pervicaciam, nulla ratione, nulla veri pondere, vix numinis vi, flectendam, vincunt praejudiciis animum, cave; totum medicorum seculum, praeter unum, erravisse, in errore obstinatis animis perseverasse, in Alexipharmacorum exemplo recordare; et, an praesentes, qui receptas scholis disciplinas sequuntur, rectius videant, et non contrario extremo desipiant,—reputa.*”

† This dissingenuity has been of late carried so far, as that certain leaders in the profession of health, confess they cannot read a certain Latin book, as if that was a qualification in them, the better fitting them for their offices; and talking disparagingly of the Author, as if his writing in a style above their comprehension, was a circumstance disqualifying him from discharging the functions of a physician. It is submitted to the public to decide, where the fault lies, in a shameful professorial ignorance, or in the Author's unacquaintance with the language in which he writes.

men, foot-pads, pick-pockets, swindlers, sharpers, gipsies, regular practitioners in law, regular practitioners in physic, quacks in both these professions; so England has long held, and still holds the pre-eminence over all her neighbour countries, in being, for the reason assigned, the place of common resort, in which a comfortable subsistence is afforded to all those different denominations of purse-takers.

*Exilis domus est, ubi non et multa supersunt,
Et fallunt dominos, et profunt furibus.—*

HORAT.

Outlines of the New Doctrine.

I. THE fundamental part of this new doctrine is, that “there is a certain property in man and other animals,” (and the author afterwards extends the proposition to the whole vegetable creation,) “by which they are distinguished from themselves in their dead state, and from every other part of inanimate matter, in such a manner, that the application of certain external powers, and of certain functions peculiar to themselves, so affects them, as to produce the phenomena peculiar to their living state, that is, their own functions *.”

II. “THE external powers, producing this effect, are heat in different degrees; the articles of diet,” in food, drink, condiment, and other matters taken into the stomach; “the blood; the fluids secreted from the

* Elem. Med. X.

blood; and air." These are the external powers commonly applied. The effect of the application of "poisons and contagions is considered a little after*"

III. "THE functions of the system itself (I.) producing the same effect, are muscular contraction; the exercise of sense; the energy of the brain, in thinking, and in passion and emotion. While these produce the same effect as the external powers (II.), so, when they are considered in their origin, this is found to be partly themselves, partly the external powers."

IV. "THE result of either the property distinguishing living from dead matter (I.), or of the operation of either of the two sets of powers, being withheld, is no life†."

* Elem. Med. XI.

† The XIII. paragraph is thus corrected on the margin of the 2d. edit. "Earum rerum et actionum X. XI. XII. sine dempto opere, sine dempta proprietate, vita nulla."

V. "THE property (IV.) is named excitability; the powers (II. III.), exciting powers*. The common effect produced by the exciting powers, is sense, motion, the mental function, and the different degrees of passion and emotion†." As this effect, "from whichsoever of the powers it arises, is always the same;" that is, since "sense, motion, mental function, and passion," are the only, and a constant, effect of the exciting powers, acting upon the excitability; and that, whether one, or more, or all, or whichsoever, of the powers act; the irresistible conclusion, that arises in the mind, is, that, "the effect of the powers being the same, the mode of operation of them all must be the same." Indeed, it is a mode of reasoning frequently made use of through this whole work, that identity of known effect, always proves identity of cause, though unknown; a mode of reasoning, which, however much it be opposed by ignorance, and the effect of ha-

* Elem. Med. XIV.

† Elem. Med. XV.

bits of false logic, will certainly stand the test of every criticism, while there is uncorrupted judgment in the breast of man to appeal to.

VI. IN the XXVI. proposition, the author uses the term of excitement to express the effect of the exciting powers (V.) upon the excitability, in producing the living functions, now explained. In the XXVII. paragraph, finding “ that some of the powers operate by evident impulses;” as the impulses of touch upon the organs of sense; those of the blood and other fluids on their respective vessels; the contents of the stomach upon that organ; the contents of the intestines upon that part of the same canal; the air; upon the external surface; and the contraction of muscular fibres upon the vessels; and, that “ the effect of the others” that do not operate by impulses, as being immaterial; such as temperature upon the surface of the body; the intellectual function, passion and emotion, upon the brain; are, however, precisely the same (V.);” and

consequently, according to his usual rule of reasoning from effect to cause, concluding the "cause also to be the same;" and, perceiving "a certain activity in" the effect of all "their operations;" to express this, he employs the term of "stimulus, or stimulant powers."

VII. IN the XIX. he demonstrates, that all the ordinary "exciting powers" (II. III.), that act upon living systems, "are stimulant," and therefore, with respect to them, that an old distinction of them into stimulant and sedative, is false; in place of which, whenever debility arises from them, "that debility is owing to a deficiency in the degree of stimulus," not to a positive power of diminishing excitement; and that debility is so far the effect of privation or want of something, that, when added, would give vigour or excitement, not the effect of the addition of any thing endowed with a positive power to diminish or destroy excitement, or the state of living systems. This he exemplifies by the blood: "An over proportion" says he, "of blood stimulates

in excess, and therefore induces the diseases that depend upon excessive stimulus; but an underproportion of the same fluid, though debilitating, and bringing on the diseases of which debility is the cause, is also understood to stimulate, only in a degree less in proportion to its deficient quantity." And he next observes, that "this proposition applies to all the other exciting (II. III.) or stimulant (VI.) powers." Thus, if a person either eats, or drinks, or exerts himself in either corporeal, or mental exercise, or is exposed to the stimulus of heat, or passion, either in excess, or in a deficient degree, in all these cases, he is stimulated; in the former to excess, in the latter insufficiently; and in both, may be subjected to diseases, and that in proportion to the morbid excess, or underproportion, of stimulant power. But still the operation that takes place is stimulant. There is not the shadow of any positively debilitating, that is, sedative, power, in all this. It is, in its most debilitating degree, only a diminu-

tion, and in death itself, only a total subduction, of stimulant power.

VIII. THE author is unwilling to admit a sedative in nature*; for these good reasons, that the far greatest number of the known powers, and all those that are commonly applied to living systems, are evidently stimulant; that an analogy, so extensive, should have its weight in the cases, where the fact is not so demonstrable; that, as there is nowhere any proof of the existence of stimulants, the weight in the opposite scale is next to nothing, amounting to no more than a mere possibility of the existence of such powers in nature: Lastly, though, in some rare and singular cases, the possibility of such a positive and mischievous operation should be converted into a certainty; the admission of such a fact could make nothing against the fundamental principle of his doctrine, or any of its applications;

* For further information about this matter, see the XX. and XXI. No. of the Elem. Med. where there is also a manuscript addition, too long to be inserted here.

it would only add a positive to the known negative debility. In the mean time, till proof is brought of that very doubtful mode of action upon living systems, he goes on to unfold his fundamental principle by other propositions. And,

IX. THEREFORE, in the XXII, “ Since,” continues he, “ the exciting powers, possessing the common operation” formerly mentioned (V.), “ produce all the phenomena of life, and their only operation is stimulant* ; the whole phenomena of life, health, as well as disease, consist in stimulus, and nothing else.”

X. “ EXCITEMENT, the effect of the exciting powers,” and “ the cause of life within certain boundaries, beyond which it is destroyed, is produced in a degree, proportioned to the degree of stimulus. A moderate degree” of it “ produces health, a greater than that” excites “ diseases of

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* Elem. Med. XIX. to XXII.

excessive stimulus; a lesser or ultimately excessive degree," gives occasion to "diseases depending on deficiency of stimulus, or debility*."

XI. NEXT he adds in manuscript, that "the same excitement is the cause of the restoration of the morbid, to the healthy state, producing that effect in diseases of excessive stimulus, by its diminution, and in those of debility, by its increase †."

XII. THIS idea is further unfolded in the XXIV paragraph, the words of which are: "This is the relation of excitability and excitement to each other; that the more weakly the powers," giving excitement, "have acted, or the less stimulus has been applied, the more abundant" and languid "is the excitability; and, the more power-

* Elem. Med. XXIII.

† Elem. Med. XXIII. M. S. "Utque causa relata tam morborum, quam secundae valetudinis, subest, sic ea, quae illos in hanc restituit, est imminuta, adversus nimii stimuli morbos, aucta, contra debilitate natos, incitatio, quae utraque medendi consilium est."

fully the stimulus has acted, the excitability, is more exhausted." In the next paragraph he goes on to observe; that

XIII. "THE proportion betwixt the stimulus," or effect of the exciting powers, "and the excitability, is found" to be such, that "a middle stimulus, acting likewise upon a middle, or half wasted excitability, produces the highest excitement," that any given system is capable of; and that "the excitement arises always in a lesser and lesser degree, in proportion as either the stimulus is greater, or the excitability more accumulated*;" and, as he adds in manuscript, "that is, in the proportion in which the excitement, either falls short of, or exceeds the middle line of health. Hence the vigour of the middle age of life, and the infirmity of childhood and old age. Hence" also, to take "a shorter space of time," for an example, "vigour is the effect of living" between the extremes, "and debility the consequence of either excess or

* Or less vigorous.

deficiency." He next goes on to add in the XXVI paragraph, that,

XIV. "WHILE that is the case, every age" however, and "every habit, has its respective vigour, if the excitement be properly managed. Childhood, and that weakness, which is occasioned by an overproportion of excitability, admits of little stimulus, becomes languid upon less, is overpowered by more." He next proceeds in manuscript to give the reason: Which is, that,

XV. "IN the latter case, the excitability, without which no vital function is produced (IV.), does not subsist in the degree sufficient to produce a vigorous state of the functions." Again, youth is a "period of" weakness, because the exciting or stimulant power, without which the excitability is of no effect, has not yet been applied in the degree, sufficient to give the highest vigour. Hence, the more abundant or languid the excitability is,

the more easily it is saturated, and the less stimulus does it admit; and the incapacity for stimulus, may go so far, as that the smallest portion of stimulus, will put an end to life: And, "on the contrary, the more the excitability has been worn out, the less stimulus does it bear, till" again "the smallest portion will produce death."

XVI. THE purport of all that has been said, amounts to this, That, as excitement is the cause of life (V.), and as it is produced by an operation of the exciting powers (I.) upon the excitability (IV.), the effect of which operation is, to wear out the property to which it owes its effect of producing excitement; the more excitement, therefore, is produced, the more the excitability is understood to be wasted; and, therefore, the increase of excitement is in an inverse proportion to the waste of excitability; consequently, increase of excitement, and diminution of excitability, are terms, though none of them have ever been thought of, either in common life, or in any

department of knowledge, that may be interchanged for one another, signifying increase of vigour. Again, as the operation of the exciting powers upon the excitability, wastes the latter, in proportion to the degree of excitement that it produces; it follows, that the less the exciting powers have been applied, the less in proportion, will either the excitability be wasted, or the excitement increased; consequently an underproportioned application of the exciting powers, and an overproportion of languid excitability, are terms, though hitherto unthought of, that may be used indiscriminately, to signify a state of debility.

XVII. THE excitement, he next observes, is bounded by two circumstances*; the one of which is excess of exciting power, exhausting the excitability; and the other want of exciting power, to prevent the accumulation of excitability. The former "is owing to the body, for want of ex-

* Elem. Med. XXVII.

citability, being no longer susceptible of stimulus*; the latter, to want of stimulant power†, to occasion the proper waste or proper vigour of excitability, allowing this therefore to follow its natural tendency to accumulate and languish‡.

XVIII. WITH respect to the first; “the excess of stimulant power, exhausting the excitability, may be either temporary,” as in sleep, in diseases of increased excitement, “or irreparable,” as in death§.

XIX. “THE consequence of the latter, sudden death,” is exemplified in the death which happens from intemperance in eating and drinking, from violent gusts of passion, from the coup de soleil after great labour under heat, and from high excess in any other exciting power; while “the approach of death, preceded by diseases, is the slower,” but equally certain, “effect of the former:” Nay, “death at last is the” inevitable “effect” of the waste of excitabi-

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* Elem. Med. XXVIII.

† Elem. Med. XXXIX.

‡ Elem. Med. *ibid.*

§ Elem. Med. XXIX.

lity, though all excess should be avoided, and “the most exact proportion of excitement kept up;” and upon this principle, that “the high degree of stimulus compensates for the shortness of its application, and the long continuance of it, for a more moderate excess*.” Take for an example of the latter, the gout, asthma, the indigestion arising after a life of luxury. More examples will be found in the XXX paragraph of the Elementa.

XX. “WHEN the excitability,” continues the author, “is worn out by any one stimulus, there is still a reserve of it for any other” that has not been applied: “So, when a person has dined fully, or is fatigued with either corporeal or mental exertion, and consequently in a disposition to sleep; he will be recruited by strong drink: When this at last produces the same disposition, a more diffusible stimulus will have the same effect: And, upon the latter at last overpowering him, a still more diffusible stimulus will recover him”

* Elem. Med. XXIX.

to vigilance : “ A man, fatigued with a journey, will be roused to dancing by music, and impelled to run after a flying beauty by the hopes of overtaking her ! The languor arising from reading a difficult subject will be taken off by the perusal of a more agreeable one*.”

XXI. NEXT, he observes, that “ the waste of excitability, produced by all these means of exhausting and recruiting it, is difficult to repair ; because the access to the means of a further recruit, is lessened in proportion to the number of” stimuli “ that have already been employed.” And he gives for an example, “ any person who has half worn out his excitability by a course of ebriety, and any one who has wholly worn it out †.”

XXII. “ THE excitability thus wasted by stimulus, is debility, to be called direct ; because it arises not from deficiency, but overproportion of stimulus ‡. During the

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* Elem. Med. XXXI.

† Elem. Med. XXXII.

‡ Elem. Med. XXXV.

progress to indirect debility, the second impression of every stimulus has less effect than the first; the third less than the second; and" each succeeding one "less and less, in proportion to its degree or duration, till the last; which produces no further excitement, though" every impression "always adds something to the sum total*."

XXIII. "THE same progress to indirect debility is retarded by increasing the excitability from time to time, and giving occasion to greater force in the action of the stimulus, to produce a more salutary stimulant effect. For examples of which, take cold bathing, "lowering of diet after a debauch in eating and drinking, and a similar abatement in the whole circle of stimuli†." "But if," says he in a manuscript addition to this part, "cold sometimes seems to stimulate, it does not produce that effect as cold, acting by its own" proper "energy; but either by diminishing the excess of heat, and reduc-

* Elem. Med. XXXVII.

† Elem. Med. *ibid.*

ing it within its stimulant range of temperature, or by rendering the body more accessible to air, or by allowing an accumulation of excitability diminished by excessive stimulus, and thereby giving more force to the stimulus, now acting feebly. The operation of the other powers in producing the same effect, is to be explained in the same way. Take for an example of this operation of cold, the use of refrigerants in fevers of the torrid zone, where actual cold is hardly to be had; and the bracing, by means of cold, of a scrotum relaxed by heat. Nay, this effect" so clearly now explained, and so mistaken upon every theory that has hitherto appeared, " may go so far, as to occasion the production of sthenic diseases, more certainly from cold alternating with heat, or preceding or following it, than from heat alone *."

XXIV. IN the XXXIX paragraph, proceeding to explain the other boundary of excite-

* Elem. Med. XXXVII. M. S.

ment, he says, "the other circumstance limiting excitement, is a degree of exciting power, too small, and consequently less fit for exciting operation. This case, which depends upon deficient stimulus, and upon abundant excitability," but languid from not being sufficiently acted upon *, "is to be distinguished from the other, which implies an overproportion of stimulus, and waste of excitability. All the exciting powers may be so deficient in stimulus," or the underproportion of their stimulus may be such, "as to produce this effect. The consideration, therefore, of them all, serves both to illustrate and confirm this proposition."

XXV. "IN this case the excitability is abundant †, because in consequence of the

* The author is just now revolving in his mind an alteration in some of the terms of the fundamental proposition, which may in time end in a different mode of expressing it. But not being yet ready to give it all that exactness, which its several applications require, he is obliged to defer any alteration, till a future opportunity of making it with advantage.

† Or languid, from being unacted upon by the exciting powers,

stimuli being withheld, it is not exhausted*." Thus, "in the cold bath, where the stimulus of heat, and therefore the sum total of stimulus," applied to the system, "is deficient, the excitement is diminished," and "the excitability, as being less wasted by stimulus, is increased. The same is the fact in famished persons, in water-drinkers, in persons exposed to any other form of cold," as well as the cold bath, "in those who have undergone evacuations, in persons addicted to corporeal, to mental inaction, and those who are under dejection of mind." "The subduction of every stimulus, is more liable to produce direct debility, in proportion to the stronger operation of stimulus that any one has been accustomed to. Take for example the gout, and many other diseases, which seize some persons, and not others, in a similar state of all other circumstances†." Not only the gout ‡, but the indi-

* And consequently unfitted for a strong action upon it.

† See the Manuscript following paragraph XXXIX, in the Elem. Med.

‡ Preface to the Elem. Med. p. 1. 2. 3.

gestion so liable to happen to persons who have lived fully, as well as apoplexy, and a number of other affections, hasten their accessions in consequence of a lowering of stimulant operation, that would be innocent in persons accustomed to a lower degree of stimulant operation.

XXVI. "THIS diminution of excitement from accumulation* of excitability, may go to death †," as human experience sufficiently shows, whenever any one or more stimuli are withdrawn.

XXVII. "THE deficiency of any one stimulus, and the proportional abundance* of excitability, is, for the time, compensated by" the application of "any other" stimulus, "and often with great advantage to the system. In this way it is, that a person" languid "for want of his dinner, is invigorated by a piece of good news. And when any one, in the course

* or languor,

† Elem. Med. XL.

of the day, has not had his usual exercise either of body or mind, and therefore likely to pass a sleepless night, a cheerful glass will compose him to sleep. The debility, that want of strong drink occasions, is removed by an opiate. The languor, arising from disappointed love, is relieved by wine, and that, arising from want of the latter, is relieved by the former. The same conclusion applies to the use of stimuli, the appetite for which, is produced by art, rather than nature. The longing desire for snuff is repelled by chewing tobacco; and, when a person is languid for want of the latter, he will be relieved by smoking a pipe. “Nay, when the functions are hurt for a time, as often they are, and, on that account, access cannot be had to certain usual and natural stimuli; the substitution of others, less usual and less natural, in their place, has the effect of supporting life; till, by the due reparation of the functions, by the restoration of the natural stimuli, and these being now also in a condition to support the

natural vigour as usual, a confirmation of health takes place."

XXVIII. "As the excitability abounding* in the way that has been explained (XXIV), in proportion to the deficiency of stimulus, from its smallest to its highest degree †, may, to a certain extent, be more wore down ‡ by one stimulus, than by another, and the danger" of its overproportion § "awarded, till its sum total be reduced to that which is accommodated to health (XIII); so, the more abundant it is, that is, the more stimuli have been withheld, or the greater the want of every most powerful stimulus has been, there is left the less recourse to that mediocrity || of excitability, on which the vigour of life depends; and the weakness may rise to that degree, and the excitability become so abundant, that the excitement," proportionally impaired, "may

* or languishing,

† from its most vigorous to its most languid state,

‡ more invigorated, § of its excessive languor,

|| to that vigorous state,

at last become irreparable. All the exciting powers," applied in an underproportion, "serve both to illustrate and establish this proposition; as cold, famine, thirst, and the phenomena of fevers (XXIV)*."

XXIX. "THE debility arising from deficiency of stimulus, should be denominated direct; because it arises from no positive hurtful power, but from a subduction of the necessary supports of life †.

XXX. HAVING laid down his fundamental principle; which is, that the living state, over all nature, is the effect of the exciting powers, acting upon the excitability, and producing the cause of the living state, the excitement, under the circumstances, and within the limits, that have been marked out (IX to XXX); and that, in proportion to the degree of their application, still within the same limits: He proceeds in the fourth chapter of his original work, to an-

* Elem. Med. XLII.

† Elem. Med. XLV.

swer a question, which would naturally arise in the mind of his readers; where is this excitability, and what are its effects? In the XLVII paragraph, therefore, the title of which is,

Of Excitability and its Effects,

“XXXI. **T**HE seat” says he, “of excitability in living† systems, is medullary nervous matter, and muscular solid, which should be called nervous system. Inherent in which, the excitability, is not different in different parts of its seat, nor does it consist of parts; but it is one” uniform “undivided property, over the whole system. Which” is a fact, “that is proved by sense, motion, intellectual operation, and passion and emotion, arising immediately, instantly, and in no succession of operation, in consequence of the action of the exciting powers.” Next, proceeds he,

† For “animato” read “vivo” in the original.

“DIFFERENT exciting powers are applied to different parts of the nervous system, none, at the same time, to all the parts, but each of them in such a manner, as immediately to affect the whole system.”

“XXXII. EVERY one of the exciting powers always affects some part more than any other equal one, and different powers, in that way, affect different parts. The affected part is commonly that, to which each power is directly applied,” coming into immediate contact with it, if the power be material, or immediately acting on it, if it be immaterial. “And besides that,” he continues in manuscript, “the more excitability from the beginning, has been assigned to each part, that is, the more lively and sensible each part is; the more powerful the operation of each power, whether acting in proper proportion, or in excess, or in defect, becomes, and that through all the intermediate degrees” of its effects. “Accordingly, the brain, and

the alimentary canal, possess more excitability, that is, more life, than the other internal parts; and the parts" immediately "under the nails, more than the other external parts*." But, while such is the effect, partly of the first impulse of each power upon any part, and partly of the degree of excitability in the part, "the affection" arising from it, "as diffused over the whole system, exceeds the affection of the part in a prodigious proportion †." Proceeding to point out the proportion,

XXXIII. IN the L paragraph he says, "any one may estimate the proportion of affection in the part particularly affected, to that of all the rest of the system; by comparing the affection of the former, with as many lesser affections taken together, as there are parts of the rest of the system. Suppose the greater affection of a part to be as six, the lesser one of every other part as three; and the number of

* Elem. Med. XLVIII. XLIX.

† The original words are "toto coelo superat." Elem. Med. XLIX.

the parts, less affected, to be one thousand; then the ratio of the affection, confined to the part" chiefly affected, "to the affection of all the rest of the body, will be as six to three thousand. This fact, or something very near to it, is established by" the consideration of "the exciting powers, which" never "act" upon a part alone, but "always upon the whole body; and by the remedies removing their effect," never from a part alone, but "always from the whole body." Peripneumony is a disease depending upon an excess of excitement over the whole body, with an inflammation in a small superficial portion in the lungs. The common idea of the disease is, that the inflammation is the primary affection, and that all the general symptoms are the effect of it, once produced. But, supposing the inflammation to be the cause; the question is, what are the hurtful powers, or, as they are commonly called, the remote causes, that produce it? There is not a physician upon earth, who can point out

one. On the contrary, the hurtful powers, acknowledged to produce the disease, are excess in eating, in drinking, in the quantity of blood, in corporeal exertion, in labour under heat, or this followed by, or alternated with cold, and every other stimulant power. But who will presume to say, that any, or all these, can have any effect upon a small superficial portion in the lungs, more, than upon any other part, equal in size and nervous importance, and equally remote from the parts of the system, to which they, as hurtful powers, were immediately applied? Again, the remedies are the known ones of large bleeding and antiphlogistic regimen, in short, every other evacuant, as well as bleeding, and every other debilitating power. But, who will say, that these, as if by a sort of charm, without affecting any other part of the nervous system, can convey their energy, whatever that is supposed to be, immediately to the lungs, and, by removing the inflammation there, also remove the disease? Whatever has been

said, no body in his senses, either will, or dare, say so now. The plain fact is, that all the exciting powers operate by increasing excitement over the whole body, and all the remedies, by diminishing it to the same extent. The formidable symptom in the gout is the inflammation of the joint; the powers, that produce both that and the other symptoms, are debilitating; and those that remove it, are stimulant, and invigorating in general; in particular, one is a very powerful and diffusible stimulus: The last, as a late discovery has shown, taken into the stomach, has, in a few hours, not only removed all the other symptoms, but the inflammation itself, though seated in a part of the system, the most remote from the part first acted upon by the remedy. In like manner, the operation of our food and drink is not confined to the stomach, but evidently acts in producing excitement over all. Neither is the stimulating influence of heat confined to the surface of the body, the temperature of which alone it

affects, but is extended over the system, exciting every part. In a word, every power by which we are excited in health, every power producing, and every power removing, morbid state, those powers only excepted, which either induce or remove local affection, all operate upon the excitability of the whole system (XXXI.), and produce excitement over all, in the great proportion, to that arising in a part, which has been pointed out.

XXXIV. "IN that way it is, that," as it is observed in the LI paragraph, "the stomach and the rest of the same canal are affected by temperature*; the vessels, by the blood and the rest of the fluids; the vessels and muscular fibres, by labour and rest; the brain, by passion and emotion, and the exercise of the mental faculty; each of them more than any other equal part†." In the

* Elem. Med. LI. Read "temperies" for "frigus."

† The last line in the Elem. Med. at the head of p. 24. should be erased.

same proportion the following affections “show,” each of them, “a greater excitement in a part” than in any other equal part; “sweat, in health, flowing first from the brow of a person under exercise; checked perspiration; inflammation in diseases, or an affection analagous” to it; “headach*”; delirium: Proofs of a lower” degree of “excitement” in some one, than in any other equal part, “are excessive perspiration; sweat without labour” to account for it, especially if “cold and clammy; a great increase of other excretions; spasm; convulsion; palsy; weakness” and “confusion of mind; delirium.” “While” the extent of this proposition is universal, and its truth unquestionable, and while “the operation of the general powers, whether in excess, in just proportion, or in defect, is always exerted on some one part in somewhat a higher degree, than on any other; it must also be of the same kind in that part, as in the others, and equally with the general” operation, “be either

* In the original. “Capitis dolor” should be added,

in excess, in just proportion, or in defect; but it can never take place in an opposite and contrary degree. For, as the exciting powers," which have been applied, "are the same, and the excitability over the whole system the same, the effect must also be the same;" that is to say, "either excessive, in just proportion, or in defect, according to the degree of the powers that have operated (XXXI)." Contrary, "therefore," to a proposition, that has been universal in medical practice, which supposes such a jarring state of the system, as that one part might be so affected as to need bleeding; others, to require remedies of a contrary operation; and in other cases, that the state of a part might require a different remedy from bleeding, while all or most of the other parts required, or according to medical language, indicated, bleeding; which is what they call cases of indication and contraindication; contrary to this says he, "the excitement of a part cannot be increased, while the ge-

neral excitement is diminished, nor diminished, while the general excitement is increased*.

XXXV. NOR can it be otherwise. Suppose, for example, that a set of powers operate a degree of excitement, as any given number, let that be sixty, instead of forty, which last take for the healthy point of excitement, and thereby produces the disease called peripneumony; it is not in the nature of things, that, while this excess of stimulant operation is still continued over the system, there should be a part of the system under such a diminution of excitement, as to fall down to twenty degrees in the scale of excitement, or, as much below the standard of forty, as sixty is above it, and thereby constitute a dropsy in that part. For, since the "excitability is the same" uniform, "undivided property over all†," and the force of the powers has been such, as to operate a degree of excitement as twenty above forty; in this state of the cause, it is not to be supposed, that any

* XXXI.

† Elem. Med. XLVII.

part of the system is in a state of diminished excitement, as twenty below forty, while all the rest is raised twenty degrees above forty. It cannot be accounted for from the powers, the only, and granted, effect of which is excess of excitement; neither can it be explained in any consistency with the nature of excitability, the degree of excitement, arising from an operation upon which, being always in proportion to the degree of exciting power that has been applied †.

XXXVI. If it should be said, that, while the fact is such as has just now been stated, still, according to a late proposition (XXXII), there is an inequality in the effect of the exciting powers, and that it may produce the affection supposed to take place in a part, different from the affection arising over the whole body; the answer to such an objection is given at the end of the LIII paragraph in the *Elementa*; where, the only instance of seeming approach to such inco-

† X.

herence in the excitement, is accounted for upon the proper principle. Accordingly, after premising, that “there is no difference” in the kind of excitement, “but a difference of degree, and” that “different effects cannot flow from the same cause,” he goes on in manuscript to add, that, “upon account of the great sensibility of certain parts; for instance, the stomach, and a prevalent energy there of the exciting powers, acting in a high degree, whether in stimulating or debilitating; though those parts may sooner, than most others pass either into debility of the direct, as well as of the indirect kind, or into a great increase of excitement; yet that,” he says, “only happens for a little, and the rest of the functions are quickly hurried into the same state. Accordingly, nausea, vomiting, loose belly, and similar affections, produced by strong drink and opiates; and the same affections in appearance,” though different in reality; “as also the gout, colic, gripes, and similar others, occasioned by abstinence from food, and watery drink; likewise a return of

appetite, and the cessation of all the symptoms of the stomach, and of the rest of the same canal; which" last "is a convalescent state of the first passages*, produced by the proper administration of food, drink, and diffusible stimuli," in the foregoing part of the cure;" all these "are soon succeeded by a similar state of the rest of the system; and they are followed, the first case by indirect, the next by direct, disability, and the last by the full establishment of health over all. From all this arises the fact, mentioned in the LIV paragraph: Which is, that

XXXVII. "No universal affection has its seat in a part, they all occupy the whole system; because, with the inequality mentioned (XXXII.), the excitability is affected in them all." This is a proposition diametrically opposite to a notion that has possessed the minds of all physicians.

XXXVIII. "Nor does the affection of the part, which more especially suffers, take place

* The stomach and intestines.

first," as upon the supposition of peripneumony arising from the inflammation in the lungs (XXXIII), and is then propagated over the rest of the system; because, as soon as the excitability is affected anywhere" in the system, "it is also affected every where," and "immediately, because it is one" uniform "undivided property" over all*.

XXXIX. "BOTH facts (XXXVII. XXXVIII.)" he next adds, "are confirmed by" this universal fact, that "all the exciting powers affect the whole body as quickly as they do any part," and by another fact likewise universal, that "universal diseases make their appearance over the whole system as early as in any part, and, for the most part, more early."* His conclusion from this, respecting the practice, is therefore unavoidable; which is, that "every affection of a part, however formidable," such as that of the lungs in peripneumony; of the head in phrenitis; of the brain in typhus fever; of the foot

in the gout; of the lungs again in asthma, and so forth, “in universal diseases; is only to be considered as a part of the affection of the whole system, and the action of the remedies is not to be directed to the part,” even where that is accessible, “but to the whole system*.”

XL. THERE has been no end of the errors in our profession, all arising from suppositions, which are the reverse of the propositions laid down in this chapter of the *Elementa*. Wherever the predominant symptom in any case of disease appeared, there they supposed the whole morbid state to center, and the whole cause to act. Hence, a number of diseases, in which inflammation commonly appears, have been distinguished into a set or order, as if the inflammation were the sole primary affection, and all the other symptoms depending upon it. Others have been arranged into an order of spasmodic; others into one under the denomination of convulsive; others into an order distinguished

* *Elem. Med.* LVI.

by hydropic affection; others into bleeding diseases, called, from a false conception of the common cause, hemorrhages; others, also separately arranged from a discharge of colourless fluids occurring in them, have been denominated fluxes or profluvia: But these conspicuous symptoms, though they have been considered as marking the complete character of each concurrence of symptoms to which they belonged, only made, each of them, one of the number, and had no greater share in the sum total of morbid affection, than the proportion of six to three thousand. Instead, therefore, of their meriting to be considered as the whole disease, and the powers producing them, as the whole morbidic powers, and those removing them as the whole and sole remedies; their cause, as well as their cure, was no other than the common one of all the symptoms; nor did the cure of the symptoms depend on the removal of their cause, any farther than the latter was the common cause. All this, upon the strictest inquiry into the phenomena of

universal diseases, will come out an exact demonstration.

XLI. THE author of the *Elementa*, after finishing this chapter, in a lecture makes some remarks upon symptoms. With respect to these he observes, that the corruption of other departments in philosophy had not been more owing to neglect of inquiry into the real phenomena of nature, and to the practice of drawing hasty and rash conclusions from mere appearances; than that of medicine had been, to the pursuit of no other means of attaining to the knowledge of diseases, but the study of the symptoms. These also, however, afford only appearances, and equally deceitful as the others; which is sufficiently proved by the symptomatologies or explanations of symptoms; by the voluminous dissertations on diagnostics* and prognos-

* Diagnostics are symptoms, the explanations of which are supposed to furnish the distinction of diseases from each other. Prognostics are symptoms, from the consideration of which, the future event of diseases is learned. A pathognomonic is

tics ; the tedious and fruitless search after pathognomonics ; and, last of all, by the lately invented department of nosology ; which are so many monuments of the depravity of medical doctrine. For, instead of leading to any real and solid knowledge, they unavoidably mislead from it ; instead of establishing the distinctions so eagerly desired, they carry confusion, intricacy, and distraction, into every part of the art. And the last of them, nosology, has laid the cornerstone of accumulated absurdity, and inextricable perplexity upon the whole*.

XLII. As the first edition of the *Elementa* is not to be found in the shops, it may not be unacceptable to the readers to insert here a character of nosology, in the following words. “ Nay, nosology, which admits diseases in place of symptoms, and symptoms in place of diseases ; which con-

a single symptom, so explained, as to be supposed of itself to furnish the distinction of the disease, to which it belongs, from every other. * See the introduction, p. XXI.

founds universal with local affections; which unites phenomena, the most distant in nature from each other, and disjoins those that are naturally allied; which takes uncertainties for certainties, and the latter for the former, and misleads from the proper business of the art, into trifling" refinements, "blundering" conceits, fictitious distinctions, neglect of just ones, and a downright ruin of the method of cure, should be strangled in its cradle. If diseases have been properly reduced to two forms *, there cannot be a thousand of them †.

XLIII. So little is to be known about symptoms, when judged of from their appearances, and not from the effect of the

* Read "formas" for species.

† The words in the original are the following: "Quinofologia, morbos pro symptomatis, et haec pro illis, recipiens, communes adfectus cum localibus permiscens, distantia natura conjungens, affinia diffocians, incerta pro certis habens, atque a proprio artis negotio in nugas, errores, discrimina ficta, verorum neglectum, & rectam medendi usus perniciem, sine fine modoque seducens, in cunis elidenda."

powers, that on the one hand produce them, and on the other remove them; that those, which have appeared to physicians as most different from each other, are often entirely of the same nature; and those, that have passed for the same, are often essentially different. Thus, horror, sense of cold, and dryness of the skin *, frequency of pulse †, paleness ‡, head-ach and delirium §, thirst and heat *, hoarseness, cough and expectoration †, inflammation ‡, which have universally been supposed by physicians, in their diagnostic, pathognomonic, prognostic, and last of all, in their nosological dissertations, to be always the same, and always such as were to be removed by an antiphlogistic plan of cure, are, however, in reality as opposite affections as ever occur in the living system. Nay, so far are they from being always of a phlogistic nature,

* CLIV. CLXXVIII. CLXXXI. where after "idem" read "et siccitatem."

† CLV. CLVI. CLXXIX. ‡ CLVII. CLXXXI.

§ CLVII. CLVIII. CLXXXII. CLXXXIII.

* CLIX. CLXXXIV. † CLX. CCXXXIII. ad cap. vii.

‡ CLXVIII. ad CLXX. CCIV. ad CCVI.

and to be removed by antiphlogistic regimen and remedies, that, on the contrary, they are, for the most part, of the asthenic kind, depending on debility, and to be removed by the most stimulant and invigorating powers.

XLIV. ON the other hand, the symptoms, which physicians have considered as different, though they partake of a common nature, are innumerable. Examples of this sort we have in catarrhal, exanthematic, and other phlogistic cases, unaccompanied with phlegmonic inflammation, which are supposed to be different from the cases accompanied with inflammation, that are, however, essentially and fundamentally the same. Thus, the concourses of symptoms, that constitute peripneumony, the common inflammatory sore throat, and rheumatism, are supposed to constitute a different order of diseases, from catarrh, the common inflammatory fever, called by Nosologists synocha, and the scarlet fever; for no other reason, but that inflammation of a part arises

in the course of the former, and does not appear in the latter. Nay, erysipelas, though attended with inflammation in a part, is considered as different from the other cases, in which inflammation also is a symptom, for no better reason, but because the inflammation in it is not so deeply seated as in the others. Nor is it ever once recollected, that all these diseases must be of the same kind, since they all arise from the same set of powers, stimulant ones, and are all removed by the same set of remedies, debilitating and evacuant ones.

XLV. AGAIN, spasms, convulsions, whether of the organs of voluntary, or involuntary motion; disposition to sweat, without the ordinary causes of it, as occurring in health; loss of appetite, loathing of food*; thirst, nausea, vomiting†; internal pain, particularly in the stomach and intestines‡; external pain§; violent painful affections

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* Elem. Med. CLXXXVI. † Elem. Med. CLXXXVII.
CLXXXVIII. ‡ CLXXXIX. CXCI. ad CXCIV.
§ CXC. CXCIV. CXCV. CXCVI.

of the head, of the breast or thorax, of the stomach, belly, or the alimentary canal*; all these, unconnected with phlogistic origin, and many others from the same common source, have been considered as so many different affections; and, upon that supposition, different heads of diseases have been marked out, as proceeding from the peculiar influence of each. So we have a set of diseases in which spasm is considered as the governing symptom, called spasmodic; another, where convulsive state furnishes the mark of distinction, denominated, therefore, convulsive; and these, again, have been subdivided according as they affected the organs of either voluntary, or involuntary motion: Others have been arranged as they were distinguished by an evacuation of different fluids. Hence, when the morbid discharge was blood, the set of diseases so arranged, have been called hemorrhages; when the fluid so discharged, was colourless, the set taking their character-

* Elem. Med. CXCVIII. CXCIX. ad CII.

istic distinction from that mark, have been called fluxes or profluvia: Others have been arranged by negative characteristics, such as their being without any discharge, or without spasmodic or convulsive motion. Instances of the former we have in that morbid state of the system, in which the menses do not occur at the usual time of life, or when this natural discharge is diminished or suppressed at any after period. Palsy, and the several atonic affections as they are commonly called, which are distinguished by a morbid diminution, or cessation, of motion, are examples of the latter. But the true state of the fact, with respect to all these distinctions taken from conspicuous symptoms, is, that each of those symptoms holds no other rank in the measure of morbid affection, than that which we have pointed out. They are not the only, or even a principle, part of the disease, but mere symptoms, like every other, depending upon the common cause, which is debility, bearing no greater proportion to the degree of morbid state over

all, than that which has been assigned (XL). Every arrangement, therefore, of diseases, taken from such symptoms, is false *, in point of pathology, and of pernicious effect on the practice of cure; the only rule for a proper arrangement, being that which fundamentally regards the cause, and the several degrees of its force.

XLVI. THE author of the *Elementa*, in arranging the sthenic or phlogistic diseases, as they stood in the first edition of that work, deviated somewhat from that rule, in making these diseases, which are the diseases of increased excitement, a genus, and subdividing the genus into specieses: Which last were four in number, the phlegmasiae, or sthenic diseases accompanied with inflammation of a part, commonly an external part; the exanthemata, or diseases, in which a contagious matter has some concern in

* For an example of a proper arrangement, look into the *Elem. Med.* CCCCXLVII. to CCCCLIII. where the sthenic diseases are arranged; and DV. to DVIII. where the arrangement of the asthenic is made out, and the reasons for both assigned.

the cause, and of which the external appearance is varied by an eruption on the surface; the hemorrhages, or diseases attended with bleeding discharge; and lastly, the sthenic apyrexies, or sthenic diseases without pyrexial, or feverish state, as the latter is most improperly called here. After going so far, when he came to the distribution of the asthenic diseases, upon his attempting, in pursuance of the same idea, to subdivide this genus also into specieses; so as that there should be one to comprehend spasmodic diseases; another convulsive; another atonic, or such as approach to paralytic state; another the several bleeding disorders; (for he now found that these, contrary to former theories, were to be ranked here, and not among the sthenic affections of the system); another the diseases, the conspicuous symptom of which was a discharge of serous fluid, commonly called profluvia or fluxes; another fevers, and so forth: He at last found, that this was an attempt that led to nothing but confusion; that its execution, even with all that confu-

sion, was impossible. In short, he found, that his subdivision of even the first genus was erroneous. For, besides the fundamental mistake of placing the hemorrhages among them, which he now found indisputably belonged to the asthenic division of diseases; the cutting off the small pox and measles, when these appear in a high violent state, (which, without great care and skill to prevent it, is a state neither unnatural nor unusual to them,) was evidently taking them from the place they naturally claimed in the scale, that is, near the head of it, and ranking them below the mildest of the phlegmasiae, or diseases the inflammation of which arises from the general cause. He now perceived, that even this distribution of sthenic diseases, however simple in appearance, especially when compared with nosological perplexed refinement, was still a relic of his nosological and systematic education. Regarding, therefore, nothing but morbid increase or diminution of excitement, and the degrees of that, as the cause of the several cases of

either sthenic or asthenic diseases; instead of making two genera of disease, and subdividing those into specieses, he found there was only room for the institution of two general forms of morbid state, a sthenic and an asthenic one: And he arranged under each of these, the different degrees of morbid state; giving thereby a scale, not of different diseases, but of a number of cases belonging to one or other of two diseases, each set the same in kind, and varying only in degree. He has therefore marked out the two parts of this scale in the *Elementa*, and treated the diseases of each in the same order.

XLVII. THE proposition, showing that all the functions of living systems, sense, motion, intellectual operation, passion and emotion, are the effect of the exciting powers, acting upon the excitability, and that that effect is excitement, had early † been laid down in the original work. It had soon after also been demonstrated,

† *Elem. Med.* XV. XVI.

that these functions, which comprehend the whole phenomena peculiar to the most perfect living systems, arise in proportion to the degree of their cause, the excitement (X). To state that comprehensive fact as exactly as possible, with respect to excitement, and to remove some errors of long standing, of universal reception, and of extensive and hurtful application to practice; he allots a chapter, entitled,

Of Contraction, and its Effects,

XLVIII. WHERE “the entire and vigorous power of contraction,” says he, “with which muscular fibres are endowed, while it depends upon excitement, is in proportion to the degree of the excitement.” “This is proved by all the phenomena of health and disease, and by every operation of the exciting powers and remedies.” And to refute an error respecting morbid contraction, which supposed that there was a disposition or proneness to the performance of motion, under a diminution of the

power of performing motion; he briefly observes, that “the force and facility” in the performance “of motion is the same. We must judge from certain facts, not appearances: Consequently tremor, convulsion, and every affection comprehended under the latter, are to be referred to debility as the cause. The exciting power in this” morbid “case is a stimulus operating rudely upon the part*.”

XLIX. “THE degree of contraction producing spasm, is no exception” from the above mentioned fact; “spasm being a continued and deficient function, rather than a great and justly proportioned one; and in so far as it is a great contraction, it depends upon the local stimulus of distention,” as in the cramp of the stomach, and spasmodic affection of the intestinal canal; “or” upon that of “something resembling” distention, as the effort of the will in moving a limb; “it consists in a diminution of excitement; is devoid of force, and removed

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* Elem. Med. LVII.

by stimulant remedies. There," says he, "is both the fact, and its explanation*."

L. "As the degree of contraction, in so far as it is a sound function, is conjoined with strength: Hence the conclusion, that the density of the contracting fibres, considered as simple solids, is in proportion to the degree of contraction, is a certain fact. Excitement, therefore, must be admitted as the cause of density, which increases in proportion to the increase of its cause; a fact, which it is easy to perceive, from the strength that takes place in madness, with a density proportioned to it, to that" degree of "debility that takes place in the article of death, in death itself, and after death, with proportional relaxation, through all the intermediate degrees. And its proof is the weakness of the same fibres in their dead state, and their strength in their living state, the sole cause of which difference is the excitement," operating density in propor-

* Elem. Med. LVIII.

tion to its degree," till in death, with the cause, the effect ceases altogether*.

LI. "HENCE" it follows, that "the cavity of the vessels, through their whole tracts, over the whole body, are increased in" a state of "strength," of the body, "and diminished in" a state of its "weakness." And "this," without having recourse to a spasm, or constriction from cold, we can discern to be the sole and simple "cause of diminished perspiration," as often as this takes place in sthenic diseases†. In the IV chapter, the title of which is,

The Forms of Diseases and Predispositions,

LII. "THE excitement," as he goes on to observe, "the effect of the exciting powers (X), when of a proper degree, produces health, and, previous to it, pre-

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* Elem. Med. LX.

† See the application of this in the propositions of the Elem. Med. CXIII. CXXII. CLIX. CLX. CLXIII. CCLIX. CCXCI. CCCXXXVII. CCCXXXVIII. CCCXXXIX. CCCXL. CCCXLI. CCCLXIII. CCCLXX. CCCLXXI. CCCLXXX. CCCXC. CCCCIX.

disposition to disease. No other condition is necessary to the living system, either in good or bad health, there is no other origin of diseases*: For both the state of the simple solids, and of the fluids, follow that of health, as constituted by excitement, and a given state."

LIII. "THE simple solids," according to an addition in the margin, "as well as the fluids, are at first formed, and afterwards variously supported, by the excitement. It is, therefore, to the excitement that the sound, as well as morbid state of both, is owing; and disease is not, as has been the common opinion, occasioned by powers foreign to those that regulate health. Nay, as in local affections themselves, disease consists not in the lesion of the solids, but in a change of excitement in consequence of their lesion; so the cure does not consist in healing the solids, but in directing their excitement. The same conclusion is to be drawn with respect to

* *Universal* is always in this part of our subject understood before the word *disease*.

the fluids, and their fountain, the blood. The affections of neither are changed by the causes of disease any otherwise, than by a change of their excitement; and the remedies restore the healthy state of either, only by curing the excitement. Affections peculiar to parts, or organic ailments, are foreign from this place" of the work, "where the general state of the body only is the subject, and" therefore "they must be passed over at present.

LIV. "THAT excitement, in this way, governs all life, is proved by the exciting powers, always acting by stimulating, and therefore giving excitement (VII.); as also by the remedies, which always bring back the healthy state, by opposing deficient stimulus to excessive, and excessive to deficient *."

LV. "The notion of the sound and morbid state, being different," a notion hi-

* Elem. Med LXIV.

thereto universal, “ is refuted by this fact, that the operation of the powers,” either “ producing or removing both” those states, “ is the same *,”

LVI. “ THE universal diseases arising from excessive excitement, are named sthenic, those produced by deficient excitement, should be denominated asthenic. Hence” there are only “ two forms of disease, each of which is always preceded by predisposition †,”

LVII. “ THAT the origin” just now “ mentioned, of universal diseases, and the predispositions” leading to each, “ is the only just one, is proved by the same powers, which produce any particular disease, any predisposition, also producing the whole form to which it belongs; and by the same remedies, which cure any particular disease or predisposition, also curing all the diseases of its respective form (LV). Perfect

* Elem. Med. LXV.

† Elem. Med. LXVI.

health is a middle state betwixt the opposite" extremes of "diseases and predispositions, without deviation to either side*." In the next paragraph he goes on to explain his principal terms, in the following manner:

LVIII. "THE exciting powers which produce" either "the predisposition to sthenic diseases †, or those diseases, should be denominated sthenic, or, in a restricted sense, stimulant: Those that pave the way to asthenic diseases, or actually produce these diseases, should be called asthenic, or debilitating, powers. The state of the body, constituting the former, or the predisposition to them, should be named sthe-

* Elem. Med. LXVII.

† Wherever the word phlogistic occurs through the whole Elementa, read for it sthenic. The Author found, after he came to the place in his work, where he extends the doctrine to vegetables (cap. XII. CCCXVII to CCCXXVI.), that the old metaphorical term, borrowed from a false theory of the mode of operation of the powers so named, would not apply to them without absurdity, and that the term sthenic, as pointing out the proper mode of operation, and as being a good contrast to asthenic, was the only eligible one.

nic diathesis; that which produces the latter, with the predisposition peculiar to them, should be named asthenic. Each diathesis, is a state of the body in common to predisposition and disease, varying only in degree. The powers that raise both the diatheses to the morbid state, should be distinguished by the title of exciting, hurtful powers*". Summing up at last

*The Effects of both the Diatheses, and of the
most perfect Health*

LIX. IN the VII chapter; "the effect," continues he, "in common to all the asthenic, hurtful powers, in producing morbid affection of the functions, is, first to increase these, then to diminish some of them, but never by a debilitating" operation, "and to throw others into a state of disturbance." The effect in common to all "the asthenic, hurtful powers, is always to diminish the same" functions, "in such

* Elem. Med. LXVIII.

a manner, as to give an appearance, which is always a false one, of sometimes increasing them *."

LX. "IF the exact degree of excitement could always be kept up, mankind would enjoy eternal health ; which is prevented, however, by two circumstances : " The one of which is, that " such is the effect of sthenic diathesis (LVI. LVIII.), that it too soon wears out the sum total of excitement, allotted to every system upon its commencing its living state ; that it shortens life, often through the intervention of diseases, and sooner or later, according to its degree, induces death. This is one cause of mortal state †. Again,

LXI. THOUGH it might be thought, that the best preventative of that effect would be avoiding sthenic, and inducing asthenic diathesis ; neither would that answer : For " the asthenic diathesis proves

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* Elem. Med. LXIX.

† Elem. Med. LXX.

hurtful, by not supplying that degree of excitement, which is necessary to health (IV.), and thereby allowing the state of life to approach more nearly to that, in which death consists: Which is the circumstance, that throws open another gate of death to mankind*:" But,

LXII. WHILE diseases and death arise from either of these causes, he next observes, that " they also arise from a change of either of the diatheses into the other. Either diathesis, whether from accident, ignorance, or design, may be converted into the other, by means of the powers, that produce the other, being employed as remedies; and, when that has been done, and contrary remedies employed, the same diathesis may be turned back to the state from which it set out." The proper means of curing a peripneumony, or an asthma, may be pushed to such excess, as to convert either disease into the other. " Hy-

* And understand to every living system; at least animal and vegetable in the creation. Elem. Med. LXXI.

drothorax, so often supervening upon the cure of peripneumony, is an example of the conversion of the sthenic into the asthenic diathesis; and the conversion of the gout into a violent cough, an inflammatory sore throat, or catarrhal affection, is an equally clear instance of the use of stimulants, converting an asthenic into a sthenic diathesis. The preparatory practice to render the small pox a mild and safe disease, is nothing but removing sthenic diathesis, and inducing some degree of asthenic. But proceeding too far in that way, will induce an asthenic disease of dangerous tendency*. In the margin before LXXII, he observes, that,

LXIII. "THOUGH excitement governs all the phenomena of life (LIV.), yet the symptoms of diseases, arising from either an overproportion or defect of it, lead not to any proper judgment concerning it; and, on the contrary, that the fallacy," arising

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* See in Elem. Med. an example of this, CCXX.

from making it a source of judgment, has given birth to infinite errors. We cannot help repeating here the purport of what has been alluded to before in the introductory part, and more particularly pointed out afterwards: That, as the inquiry into abstract causes has been the ruin of the other departments of philosophy; so the unbounded explanation of symptoms, independent of all knowledge of the powers that either produce or remove them (XLI.), has been the most fertile source of error in medical philosophy. Whenever we push our researches into the most trifling phenomenon of nature beyond our ken, that is, beyond a distinct knowledge of the facts relating to it, our distance from the truth, and from all possibility of a return to useful and solid knowledge, increases with our progress (p. XII). To give an example of the effect of judging from the superficial appearance of symptoms: When either a seemingly strong and robust, or evidently weakly girl, in an epileptic fit, a disease

commonly known by the appellation of the falling sickness, beats her breast with her hands, exhibiting an appearance of force greatly above her ordinary powers, and thumps the ground with her feet in the same violent manner; nothing is more natural to a mind, unexercised in sound philosophical observation, than a notion, that has accordingly been an universal one in physic, that all this exertion is an increase of the power of voluntary motion. And hence physicians, going no further than the impression made upon their senses, have assigned for the cause of this convulsive motion, an increased influx of the nervous power into the muscular fibres so affected. But, that all this is a deception, is proved by a great induction of facts, which shows, that this phenomenon, as well as those of ninety-seven diseases out of the hundred, incident to mankind, is occasioned by no powers, but debilitating ones, and removed by no remedies, but such as increase vigour. The same reasoning applies to the explanation of every symptom. We know no-

thing about any one, unless in so far as we have entered into a careful and cautious investigation of all the certain facts, the knowledge of which is necessary to the developement of their true nature. The author concludes this chapter in the following words*,

LXIV. "FROM all that has been hitherto said, this certain fact follows, that life is a forced state," &c†. In the VIII chapter, where he treats

Of Predisposition,

LXV. "PREDISPOSITION," he says, "is a middle state between perfect health and disease; the powers producing which are the same with those that produce disease (LII.), acting with a slighter degree of force, or for a shorter space of time‡. The" pe-

* Elem. Med. LXII.

† See note p. LXIV.

‡ What follows is erased, as being a repetition of what had been said before.

riod of “predisposition is shorter or longer, in proportion to the greater or smaller force of the powers” producing it; “and the interval of time betwixt perfect health and disease is,” in the same proportion, “sooner or later finished*.”

LXVI. “THAT predisposition necessarily,” as had been already said, “precedes disease, is evident from this fact, that it arises from the same exciting powers, acting upon the same excitability, which produce both health and disease (XXXI.)†, and is a state of excitement,” holding a “middle” rank “betwixt these two. As the excitement of health is much removed from the morbid” excitement; “it is not, therefore, to be thought, that the former mounts up at once to the latter, and skips over the boundary of predisposition; which is also a sure and certain fact. No body” enjoying “complete health, is all

* Elem. Med. LXXIV.

† Elem. Med. LXVI. LXVII.

at once affected with an universal disease*.”

LXVII. “ CONTAGIOUS diseases are not exceptions from this observation; because, whether the matter of contagion acts by stimulating, or debilitating, its operation is the same with that of the ordinary hurtful powers; that is, its cause is the same†, and the affect arising from it must also be the same‡. Since, therefore, universal diseases are the consequence of contagion, as well as of the ordinary powers; neither,” therefore, “ differ in any respect of consequence, their sole difference consisting only in degree§. When the

* LXXV. † Through the whole of this work, whatever the Author calls *noxae excitantes*, or the translator, hurtful, exciting powers, the meaning of that, in common medical language, is remote cause; and whatever he calls cause, that is to be understood as conveying the same meaning with the proximate cause of medical writers.

‡ For this fact, he refers to the XXI paragraph of the *Elementa*.

§ What follows in the next sentence is erased, as somewhat obscure. See also XXI of the *Elem. Med*.

hurtful effect of the ordinary powers is guarded against, the histories of contagious diseases show, that that of the contagious matter amounts, at most, to a very mild disease; often so mild, as to exhibit no symptom, but a slight eruption, without any affection of the excitement, entitling it to the appellation of universal disease, as defined in the beginning of the *Elementa**. And, even allowing the contagion to have some share in the production of the disease as universal, since that effect of its operation is the same with the effect arising from the ordinary powers; all the inferences from the latter, must equally flow from the former. If, therefore, it is a fact, that the operation of the ordinary powers is, first to produce predisposition, and, when longer continued or increased in force, to excite disease; it must be equally a fact with respect to the operation of contagions: For their operation in producing eruption, independent of

* *Elem. Med* IV.

their effect upon the excitement, is altogether out of the question; it being merely local, and therefore belonging to the consideration of local diseases; which is properly expressed in the end of the LXXVI paragraph of the Elementa. "If, which sometimes happens, no universal affection follows the application of contagion, no undue increase or defect of excitement; the affection," in that case, "is altogether local, and foreign from this part" of the work. Of this he gives an illustration in manuscript, in the following words: "Take, for an example, the pustules frequently appearing about the nipples of nurses, who have already had the small pox, or a slight eruption in many persons, under the infection, without any universal disease. The same conclusion applies to the buboes in the plague," when that peculiar eruption is "accompanied with no diminution," as the other is with no increase, "of excitement*."

* The shortest and most simple account of local disease, in so far as it applies to this place, is, that it is an affection of a

LXVIII. UPON this subject of inquiry, whether there be any exceptions to the proposition, which makes predisposition necessary to universal diseases, the translation of a paragraph in the *Elementa*, seems to be very much to the point. Its words are these: “Poisons either do not produce the universal diseases, which are our present subject; or, if they do produce them, their effect being the same with that of the ordinary powers, their” mode of “operation” that is their cause, “must be the same †.” Without settling the point, whether the obscure operation of those

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part, that affects not the general functions. For a further account, consult the *Elementa* V. VI. as also the M. S. following the XVII paragraph, where definitions are given, first of universal, and next of local stimuli, in these words:—“*Stimuli sunt potestates incitantes (XIV.), ita in incitabilitatem agentes, ut incitationis toto corpore semper aliquid efficiant, communes, quo commodius a localibus internoscantur, adpellandi.*”——“*Locales stimuli in partem tantum, cui admoventur, agunt; nec, nisi parto jam illic adfectu, reliquum corpus, ac saepe ne sic quidem, adficiunt.*” See also LIII, as also the fifth and last part of the *Elementa* on local diseases, from DCXC, to the end of the book.

† Elem. Med. XX.

bodies in nature, which are called poisons, be productive of universal disease, as physicians have commonly made it *, or, whether it only induces local diseases; he fails not, however, to make good his conclusion, that, if, as it is supposed, they produce universal disease, their operation must be the same with the operation of the ordinary powers: And, as the operation of the ordinary powers had been demonstrated to be stimulant; therefore, that of poisons, however little we know of it, must also be stimulant. We can also, in this place, take advantage of the same dilemma, and conclude with all the force of both the old and new logic on our side, that, if poisons either alone, or in co-operation with the ordinary powers, produce universal diseases, they must also, either alone, or assisted by these other powers, also produce predisposition to universal disease. “If” they produce not universal disease, but “bring into morbid state, persons altogether free of predisposition; for that

* It is formally enumerated among the remote causes of epilepsy, &c.

very reason, the disease," so produced, "is not to be considered as universal; and for this further reason, that it is neither removed nor relieved by the usual mode of cure," which "shows the effect to be different;" and that again "shows, that the cause, as well as the hurtful power," the poison, "is different*." He clenches the argument with this conclusion, "since predisposition and disease are the same, only varying in degree, whatever, therefore," acting "by a given force produces the latter, that," acting "with a proportionally less force, must produce the former†." In the end of the same paragraph he steps a little out of his way, to give an idea of the certain effect of some poisons in producing local affection; and to show the difference betwixt that and their operation in the production of universal disease, if ever it occurs there. "The only cure," says

* Elem. Med. LXXVII.

† *ibid.* M. S. The words are, Uno verbo, quoniam oportunitas et morbus idem est (LII), magnitudine tantum differens, quicquid igitur hunc data vi facit, illam quoque vi minore faciat, necesse est.

he, “of most poisons, is their early rejection” from the system. But, if they are, from their wounding an organ necessary to life, often* not curable, but fatal; both” that “effect,” and “the one” formerly mentioned, of their inducing disease independent of predisposition, “are foreign from the present subject, and to be referred to” the consideration of “local disease†.” Next, as he adds,

LXIX. “NOTHING is to be regarded in the hurtful powers, producing either predisposition or disease, but the degree of the former compared with the latter, or of every one compared with every other, with the view of knowing the hurtful force of each, and therefore the proportion of curative power, to remove the morbid state||.”

LXX. “THE knowledge of predisposition is of great importance; as enabling

* Read *saepe* in the original.

† Elem. Med. LXXVII.

‡ Elem. Med. LXXVIII.

the physician, to prevent diseases, to comprehend their cause," which is "founded on predisposition, and to discern" universal "from local affections," which are "very different *."

LXXI. "SINCE predisposition to universal diseases, and these diseases are the same state (LXV.)†; a great mark of distinction between universal and local diseases will be this, that universal diseases are always, local ones never, preceded by predisposition ‡."

LXXII. "As an affection of a part is always the origin of local diseases, and the distinctions that have been made (LXV. to LXX.)§, are good; therefore, all the diseases that arise from any state of a part; from stimulants, from debilitating powers, neither of which affect the whole system,

* Elem. Med. LXXIX.

† Elem. Med. XXIII. LXII. LXV. LXVI. LXVIII.

‡ Elem. Med. VI.

§ Elem. Med. VI. VII. LXXV. to LXXXI.

or affect it only in consequence of the local cause*; from wounds; from compression of a part; from obstruction; from organic affections; from other diseases; and not from the ordinary hurtful powers of universal operation over the system;" all these "must be rejected from the number of universal diseases, however much they resemble them, and dissemble their real nature;" and for the following good reasons; "that they neither agree with them in the hurtful powers," producing them; "nor in their cause; nor in their cure; nor in any one circumstance, but in a fallacious and deceiving appearance."

LXXIII. "THE local diseases that physicians have mistaken for universal, notwithstanding of this (LXXII.), their complete and diametrical opposition to each other, are numerous. Not to go much out of our way at present for examples,

* After "*neutra*," in the original there is interlined in M. S. "*vel tantummodo ex localis causae vi commovent.*"

the whole order of the phlegmasiae in the Edinburgh nosology, with the exception of those that are admitted in the Elementa, is such. All the diseases of that description, ending in *itis*, as gastritis, enteritis, splenitis, nephritis, cystitis, usteritis, hepatitis, peritonitis; or the inflammations of the several organs, from which these have received their several appellations; in plain English, the inflammations of the stomach, of the intestines, of the spleen, of the kidney, of the bladder of urine, of the womb, of the liver, of the peritoneum; all these are local diseases, differing, by the certain marks that we have given, from universal diseases. Nay, dropsy, as supposed to arise from a number of remote causes, the very enumeration of which fills a folio page in a print of very moderate types, is, after all, only a local affection, not so much as entitled to the appellation of disease; being only a symptom of so many other affections, most of them local, and therefore, in every respect, different from that affection of the

whole system, that universal disease, which has the only proper title to the name of dropsy. The same observation applies to the several concourses of symptoms, resembling epilepsy, apoplexy, palsy, and other universal diseases, which have been considered, in diagnostic and nosological treatises, as the very diseases to which they bore a resemblance. The endless instances of this kind must be deferred; as this is not the place for giving them that full consideration, which propriety will require in an after part of the work.

LXXIV. IF our readers, who are not initiated in the jargon of medical terms and distinctions, would, however, wish to have some idea of the amount of the distinction here pointed at; we have only to turn back their attention to what has been already said upon the subject: Which is, that the universal diseases, the great objects of a physicians practice, differ from the local ones therefore rejected from their number, in the hurtful powers producing

them, commonly called remote causes; in their cause; in their cure; and in every respect, excepting the misleading resemblance of symptoms; which has furnished hitherto almost the only marks of distinction; and of the fallacy and futility of which, we have so fully treated in our (XLIII. to XLVI.) late observations upon symptoms,

LXXV. To illustrate this distinction in a few words; the exciting powers of universal diseases are those which operate over the whole system, by increasing or diminishing its excitement; the operation of those, that produce local affection, is confined to the part which they affect; or, if symptoms of more general disorder arise after their operation, the cause of these is no alteration either in the increase or diminution of excitement, but the mere local affection once established: The cause of universal diseases, is increase of excitement, as in sthenic, and diminution of it, as in asthenic diseases (X. LII. LXV.);

the cause of local affections are certain powers, that produce a division of entire parts, or an alteration of their texture, as in cutting, pricking, bruising, compressing, or eroding them *: The cure of universal diseases, is to restore the healthy measure of excitement, by increasing it when too low, and diminishing it when in excess †. It must therefore be plain to every reader, that the confounding morbid affections of such opposite characters, cannot fail, in every instance of its application to the practice of cure, to be of pernicious tendency.

LXXVI. THE gross mistake, just now mentioned, of confounding universal and local diseases, is not the only one suggested by this subject of predisposition. The confusion of multiplication and distinction of causes, which all systematic writers from Galen to those of the present times,

* Elem. Med. par. V. cap. II. DCXV. ad cap. III. DCCII.

† Elem. Med. LXXXVIII.

have so much laboured, has been another source of error in the reasoning part of the art, and of false views in the practice. Accordingly, there has scarce been a paper wrote, even upon a single disease, where it has not been thought essentially necessary, to run through the whole routine of the remote causes that we speak of. They have supposed that there is one set of powers, which have no tendency to produce diseases, and only produce predisposition. Predisposition, so produced, is, according to them, not an insidious state*, differing only in degree from disease; but quite a safe state, unless another set of powers, called occasional, or procaccartic, causes, supervene; in which case the diseased state is supposed to take place. Again, though the latter set of hurtful powers were applied where there is no predisposition, they are also supposed to be innocent. Upon a review, however, of either the predisponent or occasional causes, finding that they could not make

* Elem. Med. VIII.

their hypothesis universal; they were obliged to contrive another distinction, and to admit, that sometimes the predisponent causes might rise, either in number or force, to the degree of producing actual disease; as also, that the occasional causes, though they did not fall in with predisposition, might be so increased in number or force, as to have the same effect. In the former case they were understood to be correlative powers; in this they were considered as absolute, and received a specific appellation, that of *principia**, or of simply remote causes in English. Again, because some of the same powers, whether considered in their correlative or absolute view, acted from within the system which they affected, others from without; they therefore received from that circumstance, the further appellation of internal or external causes. The predisponent as well as the occasional causes, the generic name of both which was that of remote causes, were, according to the different

* according to Gaubius in his general pathology.

view taken of them, named internal or external predisponent, internal or external occasional causes, or in one general term, internal or external remote causes; and, in their absolute sense, internal or external simply remote causes, or principia.

LXXVII. WHEN men once deviate from the truth and simplicity of nature, there is no end of the wanderings of their mis-conducted imaginations, no end of the distinctions of phenomena, which have no where any existence but in the confused conceptions of their brain. The cause of all this confusion, that makes so considerable a part in the folios of all medical systems, is the ignorance that has hitherto prevailed among physicians of the unity, simplicity, and uniformity of nature, in the most important part of her works, the system of life; a department of knowledge that should have fallen into abler hands than theirs. According to them, every thing, even in the most curious and perfect part of living systems, that of man,

is complication, both in its structure, in the connection of its functions, and in the operation of the powers acting upon it. According to truth, all is simplicity, all is unity and harmony. The property by which the human, as well as every other living, system is distinguished from the inert and dead part of matter, and upon which all the powers, now so fully explained, act, is one over all (XXXI). The operation, which the exciting powers produce on it, is also one, that is stimulant in one degree or another (V. VI. VII.). The effect arising from that operation, is also one, which is the production of the phenomena peculiar to living systems, in the most perfect kind, those of sense, motion, intellectual operation, and passion (V). In the less perfect living frames, such as those of the lower part of animal nature, and through all the vegetable kingdom as it is called, the functions compatible to each, all, arise from the same simple energy*. Since sthenic and asthenic diathesis, whether

* Elem. Med. CCCXVII. to CCCXXVI.

remaining within the latitude of predilection, or rising to the degree of actual disease, is precisely the same state, varying only in degree (X. LXXIII.); and the operation of the powers producing, and of the remedies removing, both, is likewise the same*; there was therefore no foundation for the distraction of view, with respect to the hurtful powers, that has been so universally taken of them. The author proceeds next to his

General Diagnosis.

LXXVIII. "THE violence," continues he, "and danger of universal diseases, is in proportion to the degree either of increase of excitement, or of diminution of it, whether by indirect or direct means. The proof of which arises from the whole foregoing part of the doctrine; consequently the chief difference of diseases depends upon this variation in the degree of excitement†. The only diagnosis of any moment

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* Elem. Med. LXXXIX.

† Elem. Med. LXXXII.

is that by which universal diseases are distinguished from local or symptomatic affections, which latter disturb the whole system with a certain resemblance to the former (LXXII). In order to execute that distinction, it is to be understood," from what also has gone before, "that every universal disease is discovered by a diathesis preceding it; by a similar one to that, following; and by an operation of the remedies, opposite to that which proved the hurtful power (LIV): While, on the contrary, local affection is distinguished by an affection of a part; by a disturbance of the system, which can be traced back to that" affection; by the absence of the diathesis of the disease which it resembles, or only its accidental accompaniment.

LXXIX. "To attain this useful knowledge, one should learn the necessary parts of anatomy, and not waste his time in its superfluous" niceties: "He should peruse the works of the illustrious Morgagni; he

should dissect dead bodies; he should distinguish between effects that remain, and causes that have passed away; he should carefully examine the bodies of hanged persons, and of those who have died of wounds, who may be otherwise found, and as many of them as he can: These he should attentively compare with the bodies of those who have been cut off by any disease of long standing, or of frequent recurrence; he should compare every phenomenon with every other, and the whole with the whole; he should be on guard against forming rash opinions" from such phenomena, " which has scarce once been the case hitherto. Particularly, let him never expect to find the cause of any universal disease in such subjects: Let good sense direct his judgment.

LXXX. THE whole written records of physic uniformly tend to show the insignificance of every medical system, by the constant desertion of every one, whenever the slightest prospect of any thing more

satisfactory presented itself. The expectation of great improvement from anatomical researches, is as old as the days of Erasistratus. This auxiliary branch of the medical art was much cultivated in Egypt under the Ptolomies; till both it and its professors were ejected from the metropolis of that country, by the hypocrisy and cunning of Serapion; who took advantage of his countrymen's abhorrence of the contact of dead bodies, to get rid of his anatomical rivals in the profession. We find anatomy again revived, and more fully prosecuted, in the writings of the celebrated Galen. Much labour has been bestowed upon it during two centuries past. And the success of that labour, since the discovery of the circulation, has not only far exceeded that of all former times, but has equalled the most sanguine wishes of its cultivators. Bonnetus, Morgagni, and Lieutaud have attempted a pathology on this ground, and have filled six or seven large folios with the indefatigable labour of dissections. The advantages to be reaped

from all that labour, will then only arise, when the boundary of its utility is marked out; that is, when this department of auxiliary knowledge in medicine is considered as only useful, in so far as it discovers the effects, not as it points out the causes, of universal diseases. And hence, in the next paragraph, the author of the *Elementa* observes,

LXXXI. "As internal local affections are often a certain taint, remaining in consequence of previous universal disease;" "our judgment, therefore," of the presence or absence of local disease must be directed by the consideration of the universal diseases that have preceded them; and "there is more or less reason to suspect the former, in proportion as the latter have oftener or seldomer preceded them *."

LXXXII. INDEPENDENT of this rule of judgment; it was exceedingly absurd to look for the cause of universal, or indeed

* *Elem. Med.* LXXXV.

of local, diseases in dead subjects; the cause of the former being excess, or deficiency of excitement, that of the latter, the neglect of the proper, or the employment of, an improper cure of that fault in the degree of excitement” In the X chapter, where he delivers his

Prognosis,

LXXXIII. “SINCE the powers,” continues he, “producing either the sthenic or asthenic diathesis, always act upon some part with more force,” than upon any other equal part (XXXII.); for that reason the danger of disease during the predisposition, and the danger of death during the disease, arises in proportion to the degree of the diathesis, or of the part particularly affected: But, the degree “of diathesis being given, the safety of it is in proportion to its equality; and,” on the contrary, “its urgency on an organ necessary to life, is never without instant danger. Hence, the chief fear in peripneumony,” where the

lungs, "in apoplexy, and phrenitis," where the brain, is the seat of the urgent symptoms, and in "erysipelas and the gout," when they affect the head with violence. "Local diseases and symptoms should," in forming the prognosis, "be separated from universal ones, and the directions formerly (LXXII.) delivered, transferred to this place." This remark is the more interesting, that the effect of the remedies, prescribed by the new doctrine, is of powerful influence in universal diseases; while the local affections, when they have been allowed to take place, are too often incurable, as treated by any doctrine. Incurable, however, as many local affections are, it may be an inducement to the study of a proper practice to observe, that, when universal diseases are properly managed and removed, as they can be, by such management, the chief, if not the only source of local affection, is thereby cut off: Neither are the latter of so frequent occurrence, as practitioners have commonly believed; the chief cause of that

opinion being the too frequent failure of the means commonly used for their cure. When, however, it is considered, that the pathologies and therapeutics, the theories and methods of cure, in the art, have hitherto been in such a state, as that whatever physicians have considered as hurtful powers, or what they call remote causes (LXXVI.), those are the proper remedies; and, whatever they have employed as remedies, those are the hurtful powers, in the great proportion of ninety-seven out of the hundred: It will hardly be doubted, that the chief source of the unluckiness of the common practice, both in the cure of universal, and in the prevention of local diseases, is fundamental error in the art. And, to bring the matter to full proof, we have only to add, that innumerable cases, and very nearly all those of children, the cure of which had constantly failed upon the common practice, have been both quickly and effectually removed by that of the new doctrine. Often also has all this been done, when a fatal prog-

nosus had been denounced. Indeed, the latter circumstance is not to be wondered at: For, as the prognoses hitherto have all related to the ordinary practice; according to that, the denunciation of death might have often been just, and yet belied by the efficacy of the new plan of cure. In the XI chapter, entitled

Of the Universal Plan of Cure,

LXXXIV. “THE indication,” says he, “of the cure of sthenic diathesis, is to diminish, that of the asthenic, to increase the excitement; and to go on doing so, till that degree of it, which is a medium betwixt the extremes, and suitable to health, be restored. Universal diseases admit no other indication of cure (X).”

LXXXV. As both diatheses (LXXXIV.) arise from the same operation of the exciting hurtful powers, varying only in degree; they are also both prevented and removed by an action of the remedies, which is the same, only opposite in degree to that

which produced the disease. Both the cause and plan of cure are confirmed by a proof which rests upon an induction from every one of the facts," without a single exception (X). The same debilitating powers, which cure any one sthenic disease, cure every one; the same stimulant powers, which remove any one asthenic disease, remove them all*. Are not palsy, in so far as it is curable, and dropfy, in so far as it is an universal disease (LXXIII.); and the gout and fevers, both relieved and removed by the same remedies? And are not the remedies also "the same, by which peripneumony, the small pox, the measles, rheumatism, and† catarrh, are cured? All these remedies are such, as in the asthenic case increase, in the sthenic diminish the powers of life. The operation in both cases is a common one; all the difference is in words, not in the nature of the thing."

LXXXVI. THE remedies of the sthenic diathesis are powers‡, that excite by a sti-

* Elem. Med. LXVII.

† Elem. Med. CCCCLIII.

CCCCLIV.

‡ Elem. Med. XC.

inulus weaker than that which is suitable to health, to be distinguished in the cure, for the sake of shortness of expression, by the appellation of debilitating powers. The remedies of asthenic diathesis are powers, that excite with more force, than is requisite to the best state of health; to be denominated stimulants in the practice, for the greater convenience of distinguishing them from the others *."

LXXXVII. "THESE are to be employed with more or less freedom, in proportion to the degree of the diathesis, and of the local affection depending upon it. But the cure of no disease of considerable violence, and scarce of any disease, is ever to be entrusted to any one" remedy. "In fine, the application of the remedies is never to be directed to any one place in preference to the rest, as if that were the seat of the disease (XXXVII.), in the vain expectation of being of service. The use of several remedies is

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* Elem. Med. XCI.

preferable to one, because, in that way, their energy is directly applied to a greater extent of the system, and the excitability is more completely and equally acted upon. The person, who directs the application of his remedies to a part, acts with the same" impropriety, "as one would do, who expected to eradicate a tree by lopping off a twig. An account will be given afterwards of the distinction between universal and local remedies." The next two paragraphs in the *Elementa* are erased, partly for incorrectness, and partly for want of perspicuity.

LXXXVIII. "SINCE every disease, every predisposition, depends upon increase or diminution of excitement, and is removed by the conversion of that into the middle state betwixt them (X): To prevent, therefore, as well as cure diseases, we must always practise the indication proposed (LXXXIV.), we must" always "stimulate or debilitate (LXXXVI.), never desist from acting, nor trust to the powers of nature,

which, without the external powers, are nothing*.”

LXXXIX. “ The only regard, in the indication of cure, to be had to morbid matter, is to allow it time to pass out of the system: For, whether it acts, like the ordinary exciting hurtful powers, by sometimes stimulating, sometimes debilitating; or” only “ by giving the particular form of its respective disease, and thereby adding local affection to universal disease; in either case there is no room for a new indication: Since, if the disease be properly managed, as an universal one, every eruption, and its subsequent phenomena, every species of inflammation, every ulceration,” as well as all the other symptoms, yield to the successful operation of the ordinary mode of cure. And when, in consequence of an improper method of cure, a contrary

* There is a complete refutation of Stahlianism, or of the doctrine which entrusts the cure of diseases to the powers of nature, in the first edition of the *Elementa*; a translation of which will be given in an after part of this work, where it will come in with more propriety. See *Elem. Med.* XCV.

event follows, the local symptoms are aggravated," along with the universal ones. " This has been proved long ago in the small pox, and lately in the measles *, but with equal certainty; and in the plague, as often as that disease has been treated with any sort of judgment, and with remedies proper in kind and quantity; as also in the gangrenous or malignant fore throat, and other cases of typhus fever, accompanied with similar local affection. In the two latter cases, the danger to life is always in proportion to the degree of universal affection, without which the local affection has nothing formidable in it: The same observation is also so true with respect to the former; that, though a matter has been applied, no universal disease follows, unless the universally operating hurtful powers have preceded; that the danger increases in proportion to their violence, and the

* The proof of catarrh, and therefore of the catarrhal symptoms in the measles, being sthenic, or depending upon excessive excitement, was among the last parts of discovery that the Author made. See Elem. Med. CCCLXXVIII. CCCLXXXII. CCCCVII. to CCCCXII.

whole cure depends upon the universally operating remedies ; a fact showing, that no matter, whether contagious, or any other, contributes to the cause of the disease, which it accompanies or distinguishes; or, which is more probable*, if it contributes any thing, that it differs not from the usual hurtful powers†.”

XC. “ As, both in the case of excess and deficiency of excitement, the sound perspiration is diminished during the period of predisposition, and suppressed after the arrival of the morbid state ; which has been already hinted (LI.), and will afterwards be more fully explained ; for the purpose, therefore, of more certainly dismissing all hurtful matter from the system, great pains should be taken to promote the perspiration, and keep it in that state. But neither does that imply a new indication or intention of cure ; since the only means of effecting it are those, which other-

* In the original interline *quod verisimilius est.*

† Elem. Med. XCVII.

wife remove both the diatheses, in proportion to the degree of force with which each of them is employed, and that prove serviceable not by a local, but universal mode of operation*.”

XCI. “ If any one, who, during the former period of his life, had lived luxuriously, after he comes to be advanced in age, has, either from intention or necessity, abated a good deal of his former indulgence, and still preserves an appearance of an overproportion of fluids, and” of an excess of “ vigour; we are not immediately, therefore, according to the common supposition, to infer, that he labours under phlethora †, and excessive vigour; but on the contrary, unless there should be a recent and evident cause for it, which is

* Elem. Med. XCVIII.

† an overproportion of blood, supposed by physicians to be the cause of most diseases; in every one of which, however, the contrary state, a penury of blood, takes place: And, although there are diseases in which there is too much blood; in no one of these, however, has the supposition been made, that, as such, it is the cause of the morbid state.

a possible case, the just conclusion is, that he is affected with indirect debility: The reason for which conclusion will be the stronger, if" it can be perceived, that "directly debilitating powers, have succeeded to the powers that formerly proved hurtful, by giving too much vigour. Neither should a debilitating or asthenic plan of cure be employed, which would increase the direct debility; nor one too sthenic (LXXXVI.), which would increase the principal part of the cure, the indirect debility; but a way taken" betwixt these extremes, "which is commonly called the tonic plan."

XCII. "SINCE the measure of" the remedies employed for the "cure, should be accommodated to the degree of the disease, under which, to avoid circumlocution, predisposition is comprehended; therefore, age, sex, habit, constitution, climate, soil, in short, the operations of all the exciting powers, of all the hurtful exciting powers, of all the remedies, whether they have for-

merly been properly or improperly administered ;” all these “ should be taken into consideration in the indication of cure.” After pointing out the principal cases of direct (XVII. XXIV. XXIX.) and indirect (XVII. XXII.) debility in the next two paragraphs*; in the one following them,

XCIII. “FOR the cure,” continues, he, “ of indirect debility, whatever be its degree, and from whatever kind of excessive stimulus it arose ; the quantity of stimulus to be employed, should at first be not much less than that which produced the disease ; after which it should be more and more diminished till the disease is removed*.

XCIV. “THE removal of the hurtful effect of every stimulus, should be first attempted by” the use of “ the same stimulus in a lesser, then in a lesser degree, and soon after, by” that of “ another similar to it ; by and bye recourse should be had to one similar to the last ; and the transition always be

* Elem. Med. CI. CII.

† Elem Med. CIII. The next, or CIV. paragraph, is erased as trifling.

made from the” use of “ the more violent and more diffusible, which nature in her sound state rejects, to that of the milder, more durable, and more suitable to nature” in the sound state, “ till the health can be preserved by its usual supports *.”

XCV. FOR “ such is the nature of the loss of excitability, that it rushes instantly to death, unless life be supported by a degree of stimulus” still “ great, though less than that which occasioned the loss, and then gradually diminished, till life can be preserved†, by means of the moderate degree of stimulus which is suitable to nature, or one a little greater. The difficult cure of drunkards and gluttons, when,” in consequence of their intemperance, “ they have fallen into disease, sufficiently proves this observation, and it holds good with respect to the consideration of all the

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* Elem. Med. CV.

† Elem. Med. XXXIV. where, for *succurri vitæ*, read *servari vita*.

powers that stimulate in excess." The above direction regards the cure of indirect debility.

XCVI. "IN" the same "indirect debility, the debilitating plan of cure," employed "to restore the vigour, should be avoided; neither kind of debility being curable by the other, nor any degree of either by any degree of the other. It is only in the progress to indirect debility, that directly debilitating powers give a confirmation of the vigorous state," at a period, "when it is in danger of being destroyed." The powers producing that effect "are cold bathing, lowering" the articles of "diet, weak drink, and a similar abatement" in the application "of the other stimulant powers*."

XCVII. FOR the cure of direct debility, we should begin with the smallest degree of stimulus, and then rise to higher

* Elem. Med. XXXIV.

and higher degrees, till the morbid overabundance* is gradually wore away†, and the healthy state at last restored‡.

XCVIII. HERE again, every sort of “debility, both of the indirect and direct kind, must be avoided; and that both for the reason” just now “assigned; and because the stimulant plan of cure, when pushed to excess, converts sthenic into asthenic diathesis, the latter into indirect debility, and the indirect debility into death. While, therefore, on the one hand, the directly debilitating powers, mentioned above (XCVI.), are to be avoided; on the other hand, it must not be forgot, that the measure of curative means must be accommodated to the measure of morbid state §. The direction respecting this, with its proper explanation, is as follows: “As all life depends upon stimulus (IX. X),

* languor,

† removed by the substitution of a vigorous state of it,

‡ Elem. Med. CVII. The next paragraph is erased for the same reason as the last mentioned.

§ Elem. Med. XLIV.,

and as both the overproportion and defect of stimulus produces disease, and that in proportion to the degree of either its overproportion or defect; so the remedies of both deviations from the proper standard, must be accommodated to the degree of deviation, &c.” Again, proceeding to exemplify this curative direction, “the thirst,” he adds, “which proceeds from debility as its cause, is increased by a draught of cold water, is hurried on to nausea and vomiting, and quenched by pure wine or spirit; and the troublesome symptoms that would otherwise arise, are prevented. The thirst, the cause of which is sthenic, is increased by strong drink, which produces nearly the same tumult of symptoms, as water does in the other case; cold water fates it, and prevents the future tumult*.” In a former part of the *Elementa*†, he is still more particular upon this important subject, where he lays down the principle upon which it turns. There

* *Elem. Med.* CIX.

† XLIII.

XCIX. "THE career," as he observes, "of this abundant excitability to death, is so precipitate, that the only means of restoring health, is first to oppose the debility with a very small quantity of high stimulus, scarce exceeding the small degree of stimulus which occasioned it; then, after a part of the abundant excitability is wore off*, to use more force of stimulus; after that, in proportion as more excitability is worn off†, to go on with a still greater proportion of the stimulus, and to proceed constantly in taking off every degree of superfluity of the excitability‡, till the salutary mediocrity§ of it is arrived at (XIII). This state is directly opposite to" the "debility" occasioned by a "waste of excitability||, and to the danger of death from that" source. Accordingly, "a famished person ought not forthwith to be treated with a full meal" for his cure, nor a person long afflicted with thirst, with a plentiful

* of the languid excitability is roused to vigour.

† as the languor of excitability is removed.

‡ of languor of the excitability.

§ vigour,

|| languor.

draught; but" the food should be administered "bit by bit;" the drink, "drop by drop;" and then both given by degrees more plentifully. A person torpid with cold should gradually receive the cherishment of heat; to a person in deep affliction from grief, joyful news should gradually be communicated. The safety of the young Roman, who survived the fatal overthrow at Cannae, should have been told the mother in a round-about way; first, as a doubtful report, then, as more certain, after that, as still more so; finally, as admitting of no sort of doubt; and, last of all, he should have been presented to his mother, after she had been also supported by other stimuli, and recruited with a bumper of something strong*.

C. "WHEN the direct debility (XCVII) is so exquisite, as not to yield to the same diffusible stimulus, though the highest of the order; in that case, it must

* Elem. Med. XLIII. The remaining part of the paragraph is dashed out as nonsense.

not be forgot, that other stimuli, also of the diffusible kind, must be used in routine with that which has failed. There have been cases, where, after an opiate itself had failed, musk, volatile alkali, camphire, and aether, have all had their turn to effect the purpose of wearing out* the morbid accumulation† of excitability; and the cure made out, partly by that succession of their operation, partly by a renewal of that of the opiate." His conclusion of the general plan of cure, is in these words:

CL. "SINCE, therefore, the same powers produce life and all its phenomena‡, sometimes in excess, sometimes in due proportion, sometimes in a deficient degree, in proportion to the variation in the degree in which they are employed; and since the same is the fact with respect to the same

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* of rousing to vigour.

† the languid state.

‡ Elem. Med. CX.

powers, when they are applied as remedies; let it be therefore a perpetual rule to attend to two things, first to apply the proper kind of powers, and then not to overdo them, so as to convert either diathesis into the other," and, by passing over the line of health, instead of the intended cure, to substitute one disease in place of another, and thereby bring life itself into danger.

*A Short Review of the remaining part of the
Elementa.*

CII. **T**HIS is a pretty concise account of the preliminary part of the doctrine delivered in the *Elementa Medicinae*. In it the several propositions necessary to the developement of the fundamental principle, are laid down according to the sense of the author in the original work. And the whole is interspersed with explanatory remarks and illustrations, so as to give the philosophical and medical readers, who are otherwise unacquainted with the full

explanations, a tolerable idea of the subject. For an acquaintance with the fuller detail of the work, and its several applications to use, the subsequent parts, may be consulted.

CIII. IN the second part and first chapter of the work, the exciting powers, producing either sthenic or asthenic diathesis, are delivered alternately, as each power, according to the different degrees of force with which it is applied, produces either of these states. The order, in which they are treated, is precisely that in which they are enumerated in the I and II paragraphs of this work, or in the XI and XII of the Elementa. They occupy from the CXI number, to the CXLVIII, or beginning of the II chapter of the same second part of the work. Next, the cause of each diathesis, or the state of excitement, produced by the exciting powers, constituting the cause, is briefly announced in the CXLVIII and CXLIX numbers. The III chapter is taken up with a short account of the sthenic diathesis, or of the chief symp-

toms which distinguish that state of the body. The V chapter is a similar concise history of the asthenic diathesis, or the chief symptoms constituting it. The IV and VI chapters contain an explanation of the principle symptoms, the former of the sthenic, the latter of the asthenic; not with a view to supply any deficiency in the fundamental principle, or in the several propositions in which that is unfolded, but for the purpose of giving it further confirmation. This part of the work, therefore, widely differs from all the symptomatologies, which are to be found in any other medical systems; these being commonly so many expletives or means of supplying the glaring want of principle, that runs through, and disfigures the whole. The amount of such explanations is, that they are so many little systems within a great one, the completeness of which should have superseded them all: They are contradictions, in place of illustrations; exceptions, in place of explanations; mysterious, distracted, hypothetical jargon, in

place of clear, connected, and solid demonstration of a subject, founded on a common principle. The whole, is darkness, for light; incoherence, for unity; enigmas and riddles, for elucidations of nature: They beget neither doubt, uncertainty, nor suspense of judgment; but a clear conviction of their perfection, as deviations from truth and simplicity, and of their being productions of a complete depravity of human reason. The four chapters last mentioned, occupy from the CLI, to the CCXXXVII paragraph, or from the III to the VII chapter of the second part. As in every other part of the work, so it is particularly in this, that the fundamental principle, and the detail of particulars, reflect mutual illustration and confirmation on each other. The arrangement of all the symptoms in this part, has not received that completeness which the author wishes to give it: But, till that shall be done, he refers his reader to an example of a natural arrangement of the principle asthenic symptoms, as these ascend in disease

from the slightest loss of appetite, to the highest convulsive and spasmodic affection of the organs of voluntary motion* in tetanus and epilepsy. The series of the symptoms, are loss of appetite, loathing of food†, thirst, nausea‡, vomiting§, pain of the stomach and intestines||, pain in the exterior parts of the body, in both cases sometimes of the spasmodic*, and sometimes of the convulsive kind†. He prosecutes the explanation of them from the CXCIV to the CCIII paragraph, showing that they all arise from a set of debilitating powers, and all yield to stimulant remedies; a fact, which, while it is proved

* Voluntary motion, is that motion of the body, which is performed by its own muscles, with the consent of the will, as in walking, stretching out a limb, &c. Involuntary motion, is that which is performed without consciousness of the interference of the will, as the motion of the heart, that in the stomach and intestines, by fibres that are muscular, but not disposed in a fascicular form, as those in the muscles.

† Elem. Med. CLXXXVI. ‡ Elem. Med. CLXXXVII.

§ Elem. Med. CLXXXVIII. || Elem. Med. CLXXXIX.

CXCI. ad CXCIV. • Elem. Med. CXC.

† Elem. Med. CXCI. to CXCIV.

in that work to a demonstration, is, at the same time, an entire piece of medical news to all who are unacquainted with this doctrine. To give a specimen both of his manner of explanation, and of the important view, in which that explanation has placed the symptoms; he says in the CXCIV number,

CIV. "THE simple course of" this chain of symptoms "is from the slightest of them, in loss of appetite, arising from want of the stimulus of food, and of other stimuli, or from an overproportion of these, to spasmodic or convulsive pain. For the reasons just now mentioned*, at first there is no desire for food; if the debilitating practice," that occasioned that, "is persisted in, and there is no food of the kind that can be taken, as animal soups, a loathing comes on†; by and by, if still nothing stimulant is employed, a thirst will succeed; to quench which, there will be the keenest desire

* Elem. Med. CXCIV.

† Elem. Med. CLXXXVI.

for the most debilitating power, cold water; which will be preferred to the highest delicacies, and greedily swallowed: The latter is no sooner done, than it is followed by stomach sickness*; which, unless prevented by a diffusible stimulus, such as a glass of the strongest spirit, or, that failing, another, perhaps a third," according to the urgency of the case, and the patient's former habits, will go on directly to vomiting†: And when the affection rises to any considerable violence, an acute pain, in the time of vomiting, arises in the stomach," exciting the feeling of "a bar of iron in that organ, placed across, and rudely overstretching it: When the affection still increases, and the force of the cause gains ground, every degree of torture is experienced; the head aches as it were from the stroke of a hammer: There is often a profuse looseness, with gripes and great pain; but "the" state of the "belly is oftener that of costiveness, which,

* Elem. Med. CLXXXVII. † Elem. Med. CLXXXVIII.

in the inverted peristaltic motion" that produces vomiting, is less to be wondered at*; and there occur from time to time the alternate vicissitudes of vomiting and looseness†. Among the distressing affections just now enumerated, are comprehended, dyspepsy, or indigestion in English, the gout itself, diarrhoea, dysentery, cholera, the colic, the iliac passion, the green purgings of children," a certain wasting that happens to them, called "tabes and atrophy," meaning that consumption, where a local affection is supposed to be in the neighbourhood of the intestines, not in the lungs; "and the far greatest part of the diseases of that early age‡."

CV. "As the cause proceeds in violence, and the debilitating hurtful powers prove

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* Elem. Med. CXCIV. p. 106, The next words are not translated, because they are left out, in an after correction, as tautology.

† Elem. Med. after *vomendi*, read *dejiciendique*. See also Elem. Med. CLXXXIX.

‡ Elem. Med. CXCIV.

still more urgent ; the external parts of the body, the organs of voluntary motion*, are drawn into consent. Sometimes the legs, sometimes the arms, and other parts, are variously affected with cramps. The pains," occasioned by these, "are felt sometimes in different parts of the thorax† all round ; sometimes in the shoulders ; at other times in the sides ; one while in the back ; another while in the neck behind. Nor is any part of the human body exempted from them : They happen in the regions of the lungs ; of the liver ; of the stomach : Arising in all which, they are the effect of spasmodic or convulsive motion, not of internal inflammation, as they have been commonly supposed : That the former is their real origin, is proved by the restoration of the several stimuli," the want of which had been the occasion of them, " removing them, often instantly, always in a short time, and replacing the healthy state ; it is

* Elem. Med. CXCVI.

† which, read for pectus in the original.

proved by the complete failure of the opposite plan of cure, consisting in bleeding, various other evacuations, and abstinence. Nay, what makes still more strongly for the same conclusion, is, that, as abstinence often alone is sufficient to produce" these "pains; so a full and rich diet has been also alone sufficient to remove them.

CVI. "As the same pains are sometimes conjoined with the irregular" spasmodic and convulsive "motions, that we have spoken of, and sometimes happen without them; they are, in both cases, absolutely free from every sort of inflammation; and, therefore, to distinguish them from other pains arising from such, or a similar cause, attention must be paid to the concurrence of symptoms" accompanying them. The presence of "sthenic diathesis points out that the pains are sthenic," that of the "asthenic diathesis, that they are asthenic. This observation applies to affections of daily occurrence, and overturns the ordinary practice for the cure. Even head-ach, which

is so frequent a complaint, requires the stimulant plan of cure ten times, for once that it requires the contrary," though the latter is the only one, till of late, that ever was thought of*.

CVII. THERE is a frequent disease, of which pain, somewhere in the chest, or pulmonary region, is the alarming symptom. The more ignorant physicians have often mistaken it for a peripneumony†; and the most knowing, equally unacquainted with its true nature, have considered it as a bastard sort of that disease. The mode of treatment made use of by both, was profusion in bleeding, in other evacuations, great abstinence, and the other parts of an exquisite antiphlogistic regimen. Now, a question of no difficult solution occurs here: To what is its great fatality owing? the malignant nature of the disease, or the improper method commonly employed for its cure? That it is not the former, the easy and quick solution of the disease,

* Elem. Med. CXC VII.

† Elem. Med. CXC VIII.

when treated by proper stimulant and invigorating remedies, proves by a large induction of facts*; that it is the latter, is further proved by the conformity of the stimulant plan in this case, to that which constantly succeeds in every case of similar debility, employed in different degrees of force, in proportion to the different degrees of the cause; and that through the whole great circle of asthenic diseases; which, in point of frequency, are in the proportion of ninety-seven out of the hundred, to the sthenic diseases, or those of the contrary form. While the fact rests, respecting this cure, upon such a solid induction of proof; it can be perceived, in conjunction with a great many of equal weight, to reflect the same probation upon other cures. Accordingly, the very plan of cure, that proves so successful in that painful affection of the

* A gentleman, well acquainted with both the principles and practice of the new doctrine, found both this disease, and even the moderate intermittent fever in the fens of Lincoln, after resisting the ordinary practice; the former, the mode of cure spoken of here; the latter, the peruvian bark, to yield readily to a properly conducted stimulant plan of cure.

thorax, is equally so in whatever part of the abdomen, or external surface, the pain occurs. Nay, the chain of connection goes further, and extends to “symptoms of” high morbid “perturbation in the alimentary canal”, as those of hysteria, cholera, colic, dyspepsy, and the gout, and other affections without a name. Accordingly, beside the pains formerly mentioned (CIV.), there” sometimes “happens a certain sensation of burning, anguish, painful throws, and direful torment,” in the stomach or intestines, which are “formidable in the highest degree, both to the patient and by-standers; and,” which “create a suspicion” in this case, as well as in the others just now mentioned, “of inflammation being their cause†. That these complaints, however, have no connection with inflammation, and that they depend upon quite an opposite state of the part, is pro-

* From *talem* to *pulmones* is dashed out in the CXCVIII No. of the *Elementa*, as a repetition

† This case the author himself experienced, and found the most difficult of cure of all others that he had ever engaged in;

ved by the cure turning out as often successful, as it has yet been tried," and its trials have been many. The mode of cure, upon which this proof turns, is the use of "wine, opium, and the other diffusible stimuli," as musk, volatile alkali, camphire, aether; after the use of which, and also along with them," beef, or other "animal soups; after them," and when the patient can take and digest it, "solid meat, the usual diet," in all its articles; "the usual mode of life, and guarding against" the operation of "weakening" powers. Whatever passed in the minds of physicians for the cause, whether they considered that as actual inflammation, or, according to their own language, as inflammatory; their uniform method of cure proves, that they had not the most distant comprehension of the

it requiring the whole round of diffusible stimuli, administered in high proportion, and with the utmost skill that he himself was master of. The cure was completed in ten days, though every day it suffered a temporary solution from the use of the remedies: Ordinary cases, however, are quickly cured.

true cause: But that it is not either inflammation, or any state approaching to that, is evident, both from the certain, and extensive probation adduced; and from this further argument, mentioned in the original work, that the sthenic universal inflammation, or any approach to it*, is never, even in sthenic diseases, seated in an interior part†.

CVIII. BESIDE the high symptoms of disturbance, mentioned before, as affecting the trunk, with a certain resemblance to peripneumony, and further particularized in the CXCIX number of the *Elementa*: In the natural chain of connection by which all these symptoms are united into one general affection, the same in kind, and differing only in degree; their common cause, debility, or diminution of excitement, rises to the head, producing the violent pain of that organ, and even “delirium, often so fierce, as to lead to efforts

* *Elem. Med.* CLXIX. to CLXXII.

† *Elem. Med.* CLXVIII. and CXCVIII.

above the patient's strength. This state happens towards the end of typhus fever, even when very violent. The apprehension, with respect to the cause, is, that it is inflammation: Blood is let," and "directly from the head; blisters, which are the extreme unction of physic, are applied; silence and darkness are enjoined; even the gentlest stimulants are denied. In consequence of the emptiness of the stomach, of the vessels of the whole system; in consequence of the highest languor" compatible with the living state, and that only for a short time; from the deficiency of every other stimulus," as well as those that stimulate, by filling the stomach and vessels; vertigo * is superadded to delirium;" and the patient, "deprived of his strength, his senses, his judgment, breaths out his last †." This is another high instance of this kind of affection being either without sthenic inflammation" altogether,

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* a feeling as if the head turned round,

† Elem. Med. CCI. Vid. loc. proxime relat.

“ or,” if there be any inflammation in the case, “ of its being quite distinct from universal sthenic inflammation*. That it is not the latter, is proved by the incredible success of the plan of cure, which first stimulates, and then fills the vessels; as well as by the complete failure of the debilitating evacuant plan: And the quickness of the restoration of health is an equal proof of its being no other inflammation. Now, as weakness and confusion in thinking, even in persons who are otherwise sound, is the universal consequence of debility, as arising both from other sources, and from the emptiness of the vessels, and a general penury of blood and other fluids; is there any wonder, that, in the highest penury of these fluids compatible with life, scarce leaving a shadow of life, amidst a diminution of the other functions, a failure of the intellectual one, that is, delirium, should be one? It is, however, a demonstrated fact. In that way, famine,

* Elem. Med. CLXIX.

and water-drinking, contrary to custom, after drunkenness, or a debauch in eating as well as drinking; as also depression of mind, grief, terror, despair, not only induce temporary delirium, but often carry up their effect to downright madness. The same is the upshot of any considerable loss of blood: For how many persons have there been, who, after wounds, received in line of battle or from highwaymen, have, during their life and that often a pretty long life, never after recovered their reason? To say nothing of contusions, wounds, and other injuries, by which the texture of the brain is hurt, these belonging to the head of local diseases, where they will be considered; is not death from cold effected, amidst a diminution of the other functions by delirium, preceding it? From these facts, so strong and numerous, and that bring nearly all the exciting powers into the proof, the conclusion must be admitted, that head-ach, and every failure of the intellectual function, in all its degrees, great and

small, and, in the highest of all, delirium, do not at all depend upon sthenic universal inflammation, the only inflammation hitherto known; nor necessarily upon the other universal one, the asthenic; but upon the greatest want both of other stimulant powers, and of that, which a due fullness of the vessels affords." That the latter, however, is the most frequent cause of the symptoms now mentioned, is evinced from the establishment of health being so certainly made out upon the new plan of cure*."

CIX. FAR as we have stretched out this chain of sameness in the cause of asthenic symptoms, it extends yet farther, producing other "formidable symptoms partly febrile, partly epileptic and apoplectic; such as stupor, and disposition to sleep, in all the three; in fevers, often that false watching, which is called typhomania; and "sometimes coma," or that profound sleep

* Elem. Med. CCII.

that gives little refreshment after coming out of it; “as well as starting of the tendons; in the other diseases, convulsion, and diminution of the voluntary motions. All these, without distinction, are evidently owing to the same cause, upon which all asthenic diseases depend, that is, debility; though some of them, as typhomania, and starting of the tendons, have been imputed to irritation; others to plethora, either alone and pure, or along with it to mobility.” But the same “proof,” that has been so often adduced, “of their all originating from debilitating powers, and being all relieved or removed by stimulant remedies,” is sufficient to establish debility as their origin in common with all those we have taken notice of. It is in vain, “and indeed the highest absurdity,” to make plethora the cause of apoplexy, as if, at a time of life when the system is enervated and almost bloodless, that is,” at a period “when food is neither desired, nor taken,” in due quantity, “nor digested” with proper force, “more blood could be

produced than in the flower, and most vigorous period of human life. On the contrary, when apoplexy supervenes; upon account of indirect debility from great age, and the amount of excitement during the former part of life, the solids are languid, the fluids scanty, as well as the source of the latter, the blood:" Nor is the doctrine of plethora, which has been equally applied to epilepsy, better founded; the cause of which being the same debility, the same penury of fluids," as in apoplexy, and in all the other asthenic diseases. "Fevers may consist in indirect debility, as is undoubted in the confluent small pox*, or when the hurtful power" producing them "has been ebriety: But "direct debility is by far their most frequent cause†,"

CX. WE have now, at greater length, than the bounds that we had at first prescribed to ourselves permitted, given an example of the author's manner, as well as matter,

* Elem. Med. DCLXIX. DCLXXVI.

† Elem. Med. CC.

in his explanation of symptoms. And, if the rest of the chapter from which this has been taken, as well as the whole foregoing one, be carefully examined; the purport of the whole, it is hoped, will be admitted to amount to a full establishment of the fundamental principle: Which is, that we are nothing in ourselves, but every moment in dependence upon the exciting powers, to which the whole phenomena of life, in all its states*, are owing; that these produce only perfect health, or deviation from that to diseases and death, in proportion to the degree in which they are applied; that the healthy state is unaccompanied with those alterations of the functions, which are called symptoms; that the latter, in predispotion, are not evident; and, that in disease, there is not the least connection betwixt their appearance and real nature (XLI. XLII. XLIII); that the only well founded estimation of them must be taken from the powers producing and removing

* Elem. Med. IX.

them, compared in their respective degrees of force, with those that produce the healthy state; that, when their excess goes to a certain height, it produces sthenic disease, as is shown by the concurrence of symptoms, enumerated and explained in the V chapter; that, rising still higher, or falling too low, they produce the diseases, an explanation of which is delivered in the VI chapter, and examamplified in the specimen given here. In the VII chapter, the subject of which is the consideration of sleep and vigilance, whether in their salutary or morbid state;

CXI. SLEEP is considered as arising from the same powers which induce death, only acting in a temporary way*. In the VIII chapter, the cure of each diathesis is delivered in the order of the exciting powers, as first (II. III.) enumerated. In

* For particulars, consult the Elementa from CCXXXVII to CCLI.

the IX a comparison is made of the parts, or means of cure of the sthenic, with each other; and in the X, to the CCCIV number, the same comparison of the parts of cure is applied to the asthenic diathesis.

CXII. IN the CCCIV, the title of which, added in manuscript, is, *how the remedies should be varied**, an estimation is made of the comparative force of the remedies, and of the effect of the direction of different remedies to different parts, with the view of obtaining as equal a diminution of excitement in sthenic, and as equal an increase in asthenic diseases, as possible, and thereby of procuring a complete and perfectly equal re-establishment of health. For want of which knowledge, when, even in the cure of the few sthenic diseases, for a gross idea of which they were indebted to Dr. Sydenham, physicians had pushed a particular remedy, as bleeding, to its utmost ex-

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* Elem. Med. In the original. Quo modo remedia variare debeant.

tent, and, as our author shows, to great excess; their very common complaint was, that, though they had used that remedy so freely as not to dare to push it further, still something was wanted to complete the cure: The plain cause of all that is demonstrated in this part of the work; where he says, “To bleeding alone, which is the most powerful of the debilitating remedies*, it is improper to entrust the cure of any sthenic disease; for though,” by it, “the excitement is sufficiently, and, perhaps, too much diminished in the larger blood vessels;” yet, “in the extremities of these, in the colourless vessels, and in the rest of the system not vascular, it is not enough diminished: There is, therefore, an inequality in the sum total of cure: Consequently, purging, and vomiting, which latter had never been thought of in sthenic diseases, where it is highly serviceable, and upon this very principle; and never omitted in asthenic diseases, where

* Elem. Med. CCCV.

its tendency is pernicious; and sweating, when the reduction, or original gentleness, of the diathesis admits it; and abstinence, or vegetable aliment and watery drink, and cold; lastly, guarding against the stimulating influence of the passions, and of the exercise of the intellectual functions*: All these must, in concurrence or succession, be used in their proper season and degree, to produce an equal diminution of sthenic diathesis, and therefore a completion of the cure. In the next paragraph he lays claim to the discovery of even the cure of sthenic diseases; from these two considerations; the reduction of the cure to its right principle, which is also the common one of all the rest of his doctrine; and the enlargement of it, so as to render it adequate to all the purposes of practice in every possible case†.

CXIII. FROM the CCCVII paragraph, to the end of the chapter, he continues the

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* Elem. Med. CCCV.

† Elem. Med. CCCVI.

application of the same idea to the diseases of debility, or his asthenic form of diseases; and shows, that, as bleeding, the most powerful remedy of sthenic diseases (CXII.), is not solely to be depended on for the cure of that set of diseases; so neither is the operation of the diffusible stimuli, the most powerful of the remedies here required, to be relied on: For, beside the stomach, upon which the predominant part of their operation is exerted, other parts of the system must receive the support due to them: Particularly, the emptiness of the vessels, which is a morbid state universal in this set of diseases, must be remedied by the most nourishing alimentary matter, given in such form, as can be taken and digested; and the stimulus of heat must be applied to the external surface: By which means, both the internal and external surfaces, and the vascular system over all, receive their equal support from the remedies*. Beside the use of these, along with the diffusible stimuli†, the ex-

* Elem. Med. CCCVIII.

† Elem. Med. CCCIX.

citement afforded by the motion of the body, first in gestation, and then in exercise, must be applied*. Lastly, the stimuli, supplied by the exercise of the intellectual faculty, by a proper state of passion and emotion, and a greater purity of air, than is easily applicable to patients confined to a room, are requisite to the finishing of the cure; which last, being what is called the convalescent state, requires a common management with the convalescent state from sthenic disease†. He finishes the whole of this preliminary and reasoning part of his work in the CCCXII paragraph, with the following words:

CXIV. "THE stimulant‡ plan of cure, whether the theory or the practice; the cause; the exciting powers; the indication of cure; or the remedies, be considered, is, in all its parts, *bren-new*. Is not, therefore, the whole

* Elem. Med. CCCX.

† Elem. Med. CCCV. at the end, and CCCXI.

‡ In CCCXII. for *asthenica*, read *stimulatrix*.

doctrine, that has hitherto been delivered, a demonstration, that the art of medicine, hitherto conjectural*, incoherent, and contradictory in all its parts, is reduced to an actual science, founded not upon mathematical principles, which is only one sort of probation, but upon physical ones; and supported by the sure testimony of our senses, that affords the very axioms, upon which the elements of mathematics, the only demonstrated part of the science, rest?

CXV. AFTER proving in the XI chapter, that the remedies of diseases are the same with all the other powers; a proof which had been in effect, though not in form, sufficiently made out before; in the XII and last chapter of this first part of his work, he extends the subject to every thing vital in nature: We shall present the reader with a literal translation of it: It is entitled,

* Celsus in his preface says *ars nostra conjecturalis est*, and many have had reason to say that beside Celsus.

*That all the Powers, which support any sort of
Life, are the same : Or,
The Principle of Farming.*

CXVI. “AGAIN, are not the powers, which produce and support perfect health, the same with those, which, by excess of force, occasion sthenic, by a deficiency of it, asthenic diseases, and the respective predispositions to each,” and that “without any difference, except in degree (X. to CXVI.)?”

CXVII. FURTHER, as the whole foregoing doctrine teaches, the hurtful powers producing sthenic diseases, are the remedies of asthenic, and the hurtful powers exciting the latter, are the remedies of the former*” (LXXXIV. LXXXV. LXXXVI.). The functions of the other species of animals can easily be perceived to be of a similar kind to those of the human species, differing only in degree, according to the difference of the

* Elem Med. LXXXIX. XC. XCI. 93. 94. M. S.

simple solids in form, figure, proportion, quantity, disposition and structure. The effect of that is, that, though some animals exceed the human species in the perfection of their corporeal functions, yet, the far greatest number fall short of it, even in these; and all in the portion of intellectual powers allotted to them. Upon the whole, there is, among the other animals, a scale of life stretching, in uniform gradation, from their nearest approach to human excellence, downwards, till it disappears in a shade of ambiguity with the living state of vegetables. But the chain of life ends not there; that is not the place where nature has marked her degree of nought: From the greatest perfection of this sort of life, till either its extinction in fossil existence, or its transition into an obscure mode of vitality, that we cannot comprehend; there are likewise a great number of degrees of vitality, still the same through its whole extended line. As space and duration for certain are, so life, possibly, is, infinite over the universe: The idea, however, is ob-

feure, and not to be profecuted. Our author, accordingly, mindful of his own rule (p. V. VI. VII. XIX. XXI. XXII.), has here fet up his pillar of ne plus ultra, and is content to limit his fyftem of life, his fcience of living ftate, within the boundaries of animal and vegetable vitality, in the following words, added in M.S. marked 326.

CXVIII. "THERE are many reafons for the opinion, that this globe has undergone great changes; that, whatever is now fea, has been land, whatever is land at prefent, has been fea, and that foffils have not been more tenacious of their refpective forms. But, whether they, like animals and plants, have a fort of life, fo as, like thefe, to be produced into living ftate, to grow, to attain to a full ftate of vigour, to decay, to die, and, in death, lofe their living form; the length of their age," which may be millions of centuries, "and the fhortnefs of ours, deprive us of the means of knowing, and of coming to the truth of fo vaft a fact."

CXIX. "ALL the powers, that support any state of animal life, are the same in kind, only differing in degree: Concerning which, every conclusion that has been drawn," equally "applies to plants. Accordingly, as animals, in every state of life have their exciting powers (I. II. III. V.); in predispositions and diseases, their exciting hurtful powers (X. LII. LVIII.); in the cure of both*, and in either of the two forms, "their respective indications (LXXXIV.)†, and respective remedies (LXXXVI.)‡; the same thing, in every respect, happens to plants."

CXX. "THE powers exciting which, in every state of life, are heat, air, moisture, light, some motion, internal juices §."

* for *morborum*, read *utrumque* in this paragraph, which is Elem. Med. CCCXVIII.

† Elem. Med. LXXXVIII.

‡ Elem. Med. LXXXIX. XC. XCI.

§ Elem. Med. CCCXIX. interline *motus aliquis, succi intus*, what follows *lux* in the sentence is erased as out of place.

CXXI. "THE action of the same also consists in stimulus (VII. VIII. IX.); by which the phenomena peculiar to this sort of life, some sense, some motion, and verdure are produced: And the cause of this state is the common effect of the exciting powers (V.).

CXXII. "NAY, here also, these powers (CXX.), when applied in exact proportion, produce health; and diseases, or predispositions, are the consequence of their application, either in excess or underproportion; the former inducing those that depend on too much, the latter, those that arise from too little stimulus (X.). Accordingly, too much, or too little moisture, too much heat or cold, lead to diseases and death, by an equal operation," "directly or indirectly debilitating: And, as the rays of the sun*, when too intense, or too long continued, prove debilitating individuals." f f 2

* Before *tenebrae* in this sentence CCCXXI. of the *Elementa*, read *solis radii vel*

rectly; while too much darknefs, or too long a continuance of it, directly operate the fame effect; the alternate fucceffion of night and day, of light and darknefs, is a provifion of nature*, to prevent the continuance, or exceffive fplendor, of the rays of light, from ftimulating either in excefs, and thereby inducing fthenic difeafes, or in ultimate excefs, and thereby inducing thofe of indirecť debility;" as alfo to prevent difeafes of direct debility from perpetual darknefs.

CXXIII. "NOR are plants deftitute of their refpective excitability (I. V.); which, equally as in animals, is not different in different parts of its feat, nor does it confift of parts, but is one" uniform "undivided property over the whole fyftem (XXXI.): The confequence of which is, that, to whatever part of a plant any† exciting power is applied, its operation, whether in excefs, in exact proportion, or

* A little after erafe *videtur*.

† The idiom of the Latin leads to fay *each*. Elem. Med. CCXXII.

in defect, immediately affects the excitability over the whole system."

CXXIV. "THAT effect takes place here also with the same inequality as in animals, being greater in the part, to which the exciting power has been immediately applied, than in any other equal part (XXXII.): And, as, in animals, the cause of that turns upon two circumstances, the direct impulse of the power upon the part especially affected (XXXII.), and a greater force of it upon the excitability of that part, than of any other equal part; so the same thing happens in plants: And, as in the brain, in the stomach, and intestines (XXXII.), the excitability has a greater affinity to the impulse of the powers, than in most other parts; in like manner the root of plants so corresponds to these parts, as to be most completely affected by the exciting powers: It is to the root of plants, in preference to other parts of them, that moisture flows: It is in the root* that the

* illic in the original.

most perfect temperature occurs; where” the heat is “neither excessive, and” therefore “liable to produce sthenic affection; nor ultimately excessive, so as to endanger indirect debility; nor deficient, or what is called cold, so as to produce direct debility*.”

CXXV. “But the only use of the soil, through the pores of which the powers, we have mentioned, penetrate, is to act as a filter, the pores of which are neither so large, as to allow” the powers “to go down in too great a quantity, and produce, first a sthenic, or too luxuriant a state of the plant, and afterwards indirect debility; nor so contracted, as by not giving sufficient admission” to the powers, to occasion “indirect debility, or the decaying state of the plant: But that the soil,” otherwise “is not necessary to a certain life of vegetables, is proved by their living to a certain degree in pure water; and that it is useful as a filter, is inferred from the

* Elem. Med. CCCXXIII.

good effect of plowing, breaking the clods, dividing clayey, tough, earth, with lime, absorbent earth, and thereby relaxing its pores; and likewise from the good effect of “making land, that is too friable, more adhesive and tough by dunging it;” from that “of covering thin ground with rags and stones, and by these* keeping in the heat and moisture, and by contracting the pores in every respect†.”

CXXVI. “ACCORDINGLY, the reason is evident, why every sandy, as well as every clayey soil, when the former does not receive, the latter part with, some tenacity, is barren and unfruitful: Hence, very hot summers and countries are hurtful to clayey grounds, by obstructing the pores” of the soil; but serviceable to friable and lean ones, by contracting the pores: “Hence, dry seasons suit low-lying rich lands, which draw, from all quarters around, a quantity of moisture to the roots of the plants; whereas rainy seasons” are the favourable ones to

* sic.

† Elem. Med. CCCXXIV.

“ high grounds of a thin,” poor, “ soil: Declivities of a northern aspect, the soil of which is commonly of the latter sort, are cherished and sheltered by clumps of trees, set down here and there, and” even “ by a great number of loose bare stones, covering the surface: These are serviceable by the heat and moisture which they afford; and the taking away the stones, a practice, which an ill advised industry has sometimes suggested, is productive of hurtful consequences: But there is not the same occasion for such” sources of shelter and moisture “ in places of a southern aspect, they being cherished by the sun, defended from the cold winds,” (which are commonly those that blow from any of the northern points betwixt due east and west,) “ and exposed by their more happy situation to the breezes, that blow from the south ; which,” besides their warmth, “ are seldom too dry.”

CXXVII. “ CELSUS, for a reason at first not very obvious, sets out, in the be-

ginning of his preface with the insinuation of a connection between agriculture and medicine. That there is such a connection, and a close one, is proved by the foregoing observations: But the purport of these goes further: It holds out a fundamental principle, upon which all the phenomena of vegetable life, in all its states, may be explained. The want of that principle has been acknowledged and regreted: But the cause of regret was greater than was rightly understood. The same want of principle in agriculture, as in medicine, has produced the same errors in practice. The qualities of the soil, and of the manure, have been constantly talked of, as producing all the good or bad effects that were observed. The common language, in books of farming, has been about the salts of the manure, the salts of the soil, the oil of the manure, and the oil of the soil; as if these ingredients, blended either with the earth, or the matter added to it for the purpose already mentioned, had any effect, independent of that which

gives the due porosity. The external powers, producing and supporting vegetation, are those we mentioned, and those only: Nor does the soil, whatever qualities are assigned to it, perform any other use, but that of a filter, strainer, or conductor of the external exciting powers: And the sole virtue of the manure is, to correct the faulty state of porosity, in the way that has been mentioned. The whole facts in farming and gardening, when fully and judiciously reported and properly stated, will be found to bring complete proof of this fundamental proposition. In the mean time,

CXXVIII. "To return" from this illustration and extension of our subject, the doctrine of life; "from all that has been said of the culture and nature of plants, we learn that their life is perfectly similar to that of animals, that every thing vital in nature is governed by the excitement, which the exciting powers alone produce; that no inherent property, necessary to the sup-

port of life, exists in any living system, whether animal or vegetable; that the same powers which first produce, and then support life, at length tend to death; that the living state, its continuation, decay, and dissolution, are all “equally natural; that every living system lives in its production; that, in that way, the generations of animals and vegetables are renewed, the universe remains, and remains for ever; in one word, that all things have been fabricated with one” single “instrument.”

CXXIX. “THE motions of the planets, which were made to remain and continue their courses for ever, all depend upon this one principle, That they go in a straight direction, like all projectiles; and then, by the power of gravity, which affects them all, are constantly drawn downward, and, in that way, are, upon the whole, all thrown into circular motions. But, in the smaller living bodies, with which these larger ones are filled, that is, animals and plants, the whole species of which re-

main, while the individuals" of each species "perish; the same cause, which produces the commencing and perfect state of their functions, occasions" also "the diminution, the decay, and at last the extinction of these. It is not, therefore, true, that some powers, are naturally made for the production of life and health, others for that of diseases and death;" on the contrary, "the tendency of them all is indeed to life; but that is forced, while, afterward, their tendency to death is quite spontaneous"

The Account of the Elementa continued,

CXXX. **T**HIS finishes the first volume of the Elementa Medicinæ. The second contains the practical part of the doctrine, or its application to diseases as an art. Where, first, an account is given of sthenic diseases; the other parts of the de-

* Elem. Med. CCCXXVI. CCCXXVII.

tail of which occupy from the CCCXXVIII paragraph to the CCCCLIII; and their cure from the latter to the DIII, or IV part of the work;

CXXXI. WHERE the account of asthenic diseases begins, extending to the DCXC paragraph, or the V and last part of the whole work. In the preface, the author had given an account of the circumstances which led him to this extensive discovery; and had said, that the cause, and cure, and true nature of the gout, a disease to which he himself was liable, were the first part of discovery he made: But, it is here to be observed, that the view given of every one of the asthenic diseases, is equally new, as that of the gout; and that the gout, instead of being a disease, *fui generis*, according to the pedantic language and unphilosophical ideas of systematic writers, is, in every respect, such a disease as every other, occasioned by debility. All which will sufficiently appear from the explanation of symptoms, a specimen of which has

been given here; and likewise from the history and cure of the gout, delivered from the DXCV to the DCIV paragraph, where the description of the moderate gout, and from the DCXIII to DCXVII, where that of the violent case of it, is given.

CXXXII. FROM the DCL to DCXC, intermittent fevers, or the several forms of agues, notwithstanding of the seeming remarkable difference of their types, are shown to be the same cases of disease as continued fevers; the latter the same as dysentery, the confluent small pox, and cholera, arranged among them; every one of them the same as the plague; and the whole the same, as any other disease of this form, though never esteemed febrile.

CXXXIII. IN the V and last part, or division, of the whole work, from the DCXC paragraph to the end, he delivers his doctrine

Of Local Diseases.

CXXXIV. THE arrangement of which, he delineates in the following words: "Local diseases," says he, not "in an" artificial or arbitrary "order," but in that "of nature, are divided into five parts," or heads. "The first of which comprehends" those "organic diseases, in which no affection arises in any part of the whole body, unless in the part first injured. This affection happens in parts that have, according to the common expression, little sensibility, and are endowed with little excitability."

CXXXV. "THE second division occurs in parts" that are "very sensible, endowed with very much excitability; in which the effect of the local affection is propagated over the whole body, over the whole nervous system; and" in which "a great many symptoms, similar to those of universal disease, are produced. The third is" that

“division in which a symptom of universal disease, at first,” like every one of those that “depend upon increased or diminished excitement, rises to that degree, in which it is” no longer “under” the influence of “excitement, and,” therefore, “affected by none of the remedies, that correct the morbid state of excitement. The fourth division,” is appropriated to those cases, “in which a contagion is externally applied to the body, and diffused through the whole.” The diseases arranged under “the fifth head, arise in consequence of the application of poisons, and of their diffusion over all the vessels, in such sort, that they are not understood immediately,” or “at first, to have any tendency either to increase or diminish excitement; but falling, differently in different cases, upon parts, to injure the texture of these, and, by that injury, to produce symptoms of tumult and disorder over the rest of the system.

CXXXVI. THE author of the *Elementa* uses in his lectures to reduce the whole

doctrine to such a short simple view as he can express in a scale. In that he draws a line, divided into eighty parts, expressing so many degrees of excitability, allotted to any given system upon the commencement of its living state. While all these are entire, the system is understood to be not yet brought into its living state. When they are all worn out, life is supposed to be come to an end. The mark at eighty, is life to be*; that at o' is life past†. Again, the increase of life, in proportion to the waste of excitability, which is effected by the operation of the exciting powers, to a certain limit, is expressed by decreasing numbers from eighty to forty, in the line of excitability; and by increasing numbers from o' to forty, in that of excitement. This, then, is marked as the point of life, in its completest state, and most perfect vigour (XIII.). Beyond that, the decay of life, in proportion

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* vita futura,

† vita praeterita.

to all further waste of the excitability, still effected by the operation of the exciting powers, is expressed by continuing the decreasing numbers from forty to o', equally with respect to excitability and excitement. This may be considered as either a scale of human life from beginning to end; or, as a scale of all the deviations from the point of health towards either of the extremes of predisposition and morbid state, till the complete dissolution of the living state in death.

CXXXVII. IN the DCCI paragraph, he equally proves the application of his fundamental principle to local, as to universal diseases; showing, that it is the excitement (XXVI), that governs the whole process in both cases, and that nature has no powers independent of it. The conclusion then, from the whole view that we have taken of this work, is, that excitement, universal or local, is the principle that governs life over all nature. The motions of the planets, though Sir Isaac

Newton had not discovered them, would have continued ; but, to say nothing of the other parts of this large subject, human health depends upon too nice an adjustment of exciting operation, not to require the highest skill, and most dexterous execution, to regulate it, and maintain the equal balance.

OBSERVATIONS
ON THE
PRESENT SYSTEM OF SPASM,
AS TAUGHT IN THE
UNIVERSITY OF EDINBURGH.

CXXXVIII. **T**HE most difficult and irksome task, in which the reasoning faculty* can be engaged, is the attempt to refute a doctrine completely false and absurd. As, in the purest demonstrative science, there are certain fundamental propositions, the truth of which is not proved by demonstration, but referred to the testimony of feeling; so, in false systematic reasoning, there are many fundamental and other propositions, the falsity of which eludes demonstration,

* We shall, before we are done, see the difference betwixt the reasoning faculty and the medical faculty.

and admits of no other probation, but that also arising from feeling: The former are axioms, or self-evident truths; the latter are hypotheses, or self-evident falsehoods. Most of the systems in other branches of philosophy, and all the medical systems, set out with this kind of false reasoning: It is the logic that distinguishes almost every work: The very page of history has not been exempted from it: The dignity of history has been debased; its truth contaminated; its impartiality sacrificed at the shrine of superstition, policy, and interest. The humane indignation, that oppression, rapine, and cruelty, exercised over the mild, defenceless, and innocent, excites, is more provoked by the false colourings of the soothing narrative, than by the perpetration of the atrocious deeds: For the vilest of purposes have the foundations of truth, candour, and every moral virtue been undermined, and in the very writings that were intended to rear and support them. The public has been deceived, and wantonly insulted: The whole business of science has

been a masquerade: It is time to unmask, and exhibit the genuine features of the actors. An attempt to which, with respect to medicine is the intention of this work: To execute it, a specimen of the truth is not enough: The habits of practitioners, the contagious influence of opinion, and the impressions made upon the minds of the public, are not to be removed all of a sudden, and by the perusal of a few outlines: Still the tares may be mistaken for the wheat: The weeds of error may choak it in the blade: To prevent which, the soil must be entrenched to the very extremities of the roots: Not a tendril must be left: Eradication is required: It is not enough to show truth: It must be well marked by its contrast in error.

CXXXIX. ALL this will be best effected, by beginning with that system in preference to others, which was the last in reputation, and of which, though itself has passed away, such impressions may still remain, as to require extirpation. The

system, therefore, of spasm, as it has been taught for about twenty years in the medical school of Edinburgh, where it still is taught, and as it is contained in a book, entitled, *First Lines** of the Practice of Physic, is the subject, which, for the reason assigned, is judged the most proper to set out with.

CXL. As spasm is the word of this doctrine, and supposed to express the fundamental affection upon which diseases in general depend; it will naturally be expected, that the ostensible author has set out with a distinct definition and explanation of its meaning: From that part of his task, however, he keeps very much aloof.

CXLI. No mention is made of it in his physiology†, unless we take, for such, a

* A translation of Baron Haller's title of *Primae Lineae*, meaning outlines; a phrase in English taken from the painters: But though the words *first* and *lines* are both English, they never were put together, but in this single instances, as we know.

† See a little book, entitled, *Institutions of Medicine* by William Cullen, M. D. &c. 3d. edit. 1785.

definition of an affection of that name, as old as the first accounts of the art. His words are: "There is a state of the contraction of muscles that is not disposed spontaneously to alternate with relaxation, and in which too the fibres do not easily yield to extending powers: Such a state of contraction is called a spasm*." This is the common definition of that well known affection. But it has nothing to do with the spasm which makes the subject of our present inquiry. If, by way of assigning a cause for the omission of the definition of that affection in the work we mention, it should be alledged, that the physiology, which is the explanation of the healthy functions, is not the place for the consideration of any morbid function; the answer is, that that is not the rule observed in the little work referred to; where, as in the instance just now quoted, the pathology† is very commonly, and sometimes professedly, blended

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* Institutions of Medicine, &c. CXI.

† or explanation of morbid affection.

with the physiology. Accordingly, we are told, that “the pathology of the simple solids cannot be properly separated from their physiology; and therefore many different states of these solids, though such as are always morbid, are mentioned.” Then it is next added, that “it is proper to subjoin” to the physiology of that part “a short view of the whole of” the “pathology*.” Indeed this author gives not, and never gave, any other text for pathology, but what he has interspersed with his physiology in the same little work; having used for that purpose, when he delivered his pathological lectures, the noted pathology of the Lyden professor, Dr. Gaubius. In which, as we are not to expect the spasm we speak of; it being an imaginary affection in the opinion of that writer, as well as of the whole Boerhaavian school; so neither was it supplied by its adopter, in his commentary upon that text.

* The same book XXV.

CXLII. IT is only in his text upon the subject of fever, where the first mention is made, and, in place of a definition, a strange description given, of spasm*. He ushers in the subject, in these words: "The proximate cause of fever seems hitherto to have eluded the research of physicians; and we shall not pretend to ascertain it in a manner that may solve every difficulty; but shall endeavour to make an approach towards it, such as we hope may be of use in conducting the practice."

CXLIII. THIS is a strange introduction to a strange subject. The proximate cause† of fever is announced in the title, and the reader is led to expect information about a

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* First Lines Chap. II. XXXII to XLVIII.

† The proximate cause of diseases among Physicians is that state of the body upon which all the symptoms depend. It is, according to them, occasioned by a set of powers to which they apply the general term of remote causes, and these are further distinguished as we have formerly pointed out LXXVI. LXXVII.

subject which, he is told, had “ eluded the research of” other “ physicians.” But with the same breath, he finds, he is only to meet with “ an endeavour to an approach towards it;” and he is encouraged with the “ hope” of its being “ such as may be of use in conducting the practice.” Was it for no more than this that other systems were to be overturned, and a new one substituted in their place? Was it only an enigma that the reader was to be favoured with, instead of a comprehensive view of the nature of fevers, and, in the part of the subject, where, that was certainly to be expected? He next proceeds to observe, that

CXLIV. “ As the hot stage of fevers is so constantly preceded by a cold stage,” he “ presumes, that the latter is the cause of the former; and, therefore, that the cause of the cold stage is the cause of” all that follows in the course of the paroxysm.”

CXLV. HERE our author sets out with the assumption of a fact, that will not be granted him; which is, that “the hot stage of fevers is constantly preceded by a cold stage.” That is an assertion of his own, to answer the purpose of an hypothesis, by which he means to reconcile the most continued fevers, as well as the intermittent kind, to the proximate cause he has in view. The very pure intermittents, whether of the tertian, quartan, or quotidian type, are ushered in with a cold stage, followed with a hot one; a process very much obscured in the remittent form of fevers, which, in that and other respects, appear so different from the pure intermittents, as, till of late, to have been thought to require different remedies: Particularly, it is not long since physicians agreed to give the peruvian bark in remittents. The phenomenon of a precedence of cold to hot stage, makes no figure in the fevers called *continuae*, or continued, and it is still more foreign from the most continued form of fevers, called therefore *continentes*. Con-

trary, therefore, to what he sets out with upon the subject of fever in general, “ the paroxysm or fit of an intermittent, as that is most commonly formed, does not exhibit “ circumstances essentially necessary to, and properly constituting the nature of fever*,” in the point of view in which he regards it. The hot stage preceded by a cold, occurs in no fevers but the intermittent kind. No inference, therefore, from that fact, can be extended to other fevers.

CXLVI. BUT we shall next find, that the same fact, in so far as it regards intermittent fevers, when properly considered does not by any means warrant his conclusion, in favour even of that form of fevers. The “ cold stage is always” accompanied, not “ preceded by strong marks of a general debility prevailing in the system,” as that is manifested in “ the smallness and weakness of the pulse; the paleness and coldness of the extreme parts; the shrinking of the whole

* First Lines, Vol. I. IX.

body; the langour, inactivity, and debility of the animal motions; the imperfect sensations; the feeling of cold while the body is truly warm." It is also in perfect conformity to the truth, that not only "most" but all "the remote causes of fever are sedative," that is, debilitating; for we will not dispute with him at present about the propriety of that term*. It is equally demonstrated in fact†, that "the paroxysms of fever," not only "may be, and most commonly are," but are always, "renewed by the application of debilitating powers." Nor is it less proved in fact, that "a state of debility subsists in the animal motions, and other functions through the whole of fever, and that it is the result of the operation of debilitating powers applied to the body." We grant him, that not only intermittent, but all fevers, both in their beginning, and through their whole course, exhibit most undoubted proofs of debili-

* Observat. VII. VIII. IX.

† First Lines, XXXIV. XXXV.

ty (CXXXI. CXXXII)*. Beside the clear and decisive proof which the new doctrine so amply exhibits, we have even this author's confession of the fact. The proof makes with equal force and simplicity for the conclusion, that the common cause of all fevers is debility †; but it goes by much too far, to establish spasm as that common cause.

CXLVII. "WHILE, therefore, it is an undoubted truth, that the cause of the cold stage, is the cause of all that follows," not only in the course of any one "paroxysm," but of the whole disease in every febrile case ‡; it does not follow, that "it is therefore evident, that there are three states which always take place in fever; a state of debility, a state of cold, and a state of heat ||.

* Elem. Med. DCL. DCLII. DCLIII. DCLIV. DCLV. DCLVII. DCLXX. DCLXXIII. DCLXXIV. DCLXXV. ad DCLXXXIX.

† Elem. Med. DCVII. DCLXXIV.

‡ First Lines, XXXIII.

|| First Lines. XXXV.

Here is a conclusion drawn in direct contradiction to the premises: According to his whole induction of proofs, the cold stage is not secondary to a previous state of debility, marked as this is, but is itself that very state of debility. For, when is it that the pulse appears small and weak? when do the extremities begin to be pale and cold? when happens it that one of the feet has been burnt through the shoe and stocking without the patient feeling it? Surely these symptoms happen after the commencement of disease in the cold stage: They are all symptoms of disease, and not characteristics of a state preceding the disease: That a state of debility indeed precedes every disease depending on debility, is a certain fact: But the period when that happens, is the period of predisposition; during which no symptom of disease can take place, the predisposition being, according to its definition, a state of the body, so deviating from good health, and so approaching to bad, as to seem still to remain within the latitude of the form-

er, though it is only an insidious resemblance of it*. Debility then, without these symptoms, may, and does, precede the cold stage†; but, as expressed by these symptoms, it is the cold stage.

CXLVIII. It must be the cold stage, for this further reason, that the cold, the hot, and the sweating stages, are the only ones, that either have been, or can be, observed to take place in intermittent fever. A previous stage, or one of debility, distinct from the cold stage, is only a fiction, a reverie, a dream of Dr. Cullen. “The strong marks, then, of general debility,” that our author mentions, do not “precede,†” but accompany the cold stage of intermittents. And though there are marks of debility that precede the morbid state both of intermittent and of all other proper fevers, nay even of the whole form of diseases depending upon debility as their cause;

* Elem. Med. VIII.

† Observat. LII, LVI.

‡ First Lines, XXXIV.

these are so obscured in a shade of apparent health, of which they are still an insidious resemblance *, as hitherto to have eluded the observation of physicians, and, most certainly, of our author.

CXLIX. "HE goes on, however, with his hypothesis, and as these three states" continues he, "regularly and constantly succeed to each other, in the order which we have mentioned them, it is presumed, that they are in the series of cause and effect with respect to one another." Strange logic again. Is presumption all that we are to have for proof, in a matter of the most material consequence to mankind of all others, to wit, the cause of febrile state? What is presumed? "It is presumed, that they are in the series of cause and effect with respect to one another." Here our author, compared to one acquainted with the truth, and there are many who now

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* Elem. Med. VIII.

are, is like a person hood-winked in the play of blind Harry. His play-fellows, whose eyes are open, can perceive him often to be in a right tract of pursuit, and as often in a moment carried away from it. His observations are like the rebuffs, that Milton's devil met with in his progress from Pandemonium, to blast the happy state of the first pair of the human race.

CL. DEBILITY is the cause of the intermittent, as well as of every form of proper fever (CXXII.). It constitutes the state of predisposition, which has been proved to be the same state as that of disease; it constitutes the state of disease*. Nothing more is wanted. The whole cause consists in it. There is no occasion for any other state to account for the whole phenomena of proper fever. No part of this however is discerned. Debility in the predisposition, debi-

* Elem. Med. DCL. DCLVII.

lity through the whole febrile course, is overlooked. Its occurrence in either has been a profound secret, concealed from all other physicians, and not less from this. What then is sought for? Debility. For what purpose? Not for the right purpose of laying hold of it as the proper cause of fevers, which it is; but for that of rendering it subservient to the establishment of spasm as the true cause. Where is it sought for? Not in the predisposition; of which whatever is the cause, the same also is the cause of the disease; disease and predisposition being the same, differing only in degree. Neither is it sought for in any part of the course of the disease. It is too late to look for it in the hot stage; because, whatever is the cause, it must have operated before that period. It is even too late to look for it in the cold stage; that being the disease, not the cause of the disease. Where then is it supposed to be? In a state subsequent to predisposition, but pre-existent to disease. Such a state is as impossible, as the idea of a mathematical

point consisting of parts. "There are no stages of intermittent fevers, but the cold, hot, and sweating ones. The pre-existent stage of debility, is the fiction of an imagination bewildered in the mazes of its own false conceptions: Which is proved by "the strong marks of general debility," being nothing but the actual symptoms of the cold stage.

CLI. "THIS," however, continues the author, "we hold as a matter of fact, even although we should not be able to explain in what manner, or by what mechanical means these states severally produce each other." Good God! After the miserable attempt to prove by reasoning, that debility produces a spasm for the purpose we now know: Is the act already finished? is the curtain dropt? is no further reason to be assigned? are we left to the music, to a song, for all the rest? Indeed we are. Here let a remark in the first edition of the *Elementa* be attended to. "As a defence of spasm has been

attempted in so cold, feeble, and ineffective a manner, as if the author," in the very act of making it, " had foreseen, that it would be to no purpose; so, about the end of the eighteenth century, at a time when it is an established and universal practice, to subject every part of natural, every part of moral knowledge, to the test of experiment; to weigh them in the nicest balance" of criticism; " to repel the futile conclusions drawn from empty theories; to banish prejudice far" from literate inquiry; " and not even to withhold animadversion from the subject of religion itself; would anybody imagine, that a mere piece of theory*, not recommended even by the thinnest shadow of reason or truth, and the falsity of which has been demonstrated by the most solid, and the very, arguments employed in its defence;" would any one think, that, after a vain defence of it by every species of false logic, it would be " at last obtruded" on the world " as

* *opinionem*,

a fact? “Yet that” very thing, “however much exceeding the bounds of credibility, has been done*.”

CLII. THIS is perhaps the only person who ever pretended to reason in avowed defiance of every right rule: Respect to the understanding of his hearers or readers have seldom checked his loose career: Conclusions at variance with their premises; propositions in perpetual repugnance to each other; assertions supported only by

* As the first edition of the *Elementa* is out of print, we shall supply the reader with the original of the above translation.—CXXIII. “*Ut aliqua spasmi, qualis exposita et diluta (CXVI.), defensio frigide, impotenter, et quasi vanam fore provisio, tentata est; ita, decimi octavi seculi fine, ubi omnia naturae, omnia veri, ad experimentorum fidem jamdudum revocantur, aequissima trutina perpenduntur, rationum inanum futilitas repellitur, animi praejudicia procul ablegantur, nec acri censurae ipse numinis cultus eripitur; quis, opinionem meram, nulla rationis, nulla veri, vel tenuissima, umbra commendatam, solidissimis argumentis, item ipsi tuendae adhibitis, compertam falsam (CXVI.), post vanam omni falsae logicae genere defensionem, pro re vera et certa oblatum iri, crederet? Quod utique, quantumvis fidem superans, factum.*”

the assertor's solitary testimony; conjecture assumed for certainty; presumption for proof; strained inference for evidence; emphasis for energy; words ill put together for well expressed meaning, are the hideous features, which the reader has to look for, throw this whole motely work. Plain sense, and any tolerable clearness of conception, is distracted by the task of even collecting, not to say, of arranging, and reducing to order, such heterogeneous materials. It is enough to separate the chaff from the corn, though the useless labour of nicely describing its comparative impurity be dispensed with. The contrary would be an attempt towards making a rope of sand, which defies the address of the devil. Of this strange sort of reasoning, we have a very complete specimen in that, which we have laid before our readers in the few paragraphs we have taken notice of. That the three states, of debility, cold and hot stage, are in the series of cause and effect with respect to one ano-

ther," is not proved in fact, even by "an endeavour to an approach towards" proving it. It cannot be proved, because,

CLIII. FIRST, the mode of probation is incapable of bringing forth a proof; the means are inadequate to the end. The consideration of symptoms in medicine, like the inquiry into abstract causes in other departments of philosophy, has been demonstrated, not only to be fallacious, but false, in every attempt that has been made to reason from it*. Of which, beside the instances formerly mentioned, the one before us amounts to a demonstration, that symptoms, abstractly considered, as a source of information, which is the precise case here, inevitably lead into error. The appearance of the present symptoms, when we look no further, warrants no conclusion. The pulse often appears small and weak, when it is not so in reality; the proof of which, practitioners can well attest, in

* Observat. p. 7, 8, 19, 20. XLI. LXIII.

finding, to use their own words, the pulse so often to rise upon bleeding. “Pale-ness, coldness” any where, “and shrinking of the whole body,” take place at an early period, not only in fevers, which we know to be diseases of debility, but in diseases of excessive vigour. For the proof of this we need only appeal to the experience of our readers; who, upon the arrival of a catarrh, of an inflammatory sore throat, or indeed of any of the diseases, that we denominate sthenic*, will readily recollect, that, among other symptoms, a feeling of cold, and a keen, sometimes an exquisite, desire for warmth, was a distinguishing one. Paleness and shrinking of the surface equally occur in the same set of diseases†. “Languor, inactivity, and” apparent “debility of” what he calls “the animal motions, that is, a feeling as it

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* Elem. Med. CLIV.

† Elem. Med. CLXIII. In the former reference, “cutis siccatas,” in the latter, “imminuta cutis molis,” is added in M. S.

were of fatigue, and a disinclination and inability to perform voluntary motion*, equally distinguish the approach of sthenic and asthenic diseases, those arising from increased, and those arising from diminished, excitement. In peripneumony† itself,

* Elem. Med. CXLVIII; where the increase of excitement is observed to impair some functions, but never, while it remains, by a debilitating operation.

† When the first lectures of the new doctrine were delivered, the students of the old enjoyed an imaginary triumph in the belief of their having raised an insuperable obstacle to a most fundamental part of the former; by finding the capability of moving the limbs, in peripneumony and rheumatism, often as great as in paralytic and other affections of debility. But their confidence, the natural result of the false knowledge and bad logic, with which they had been imbued by their teachers, was reduced to an abashment, that better became their age and rank in scientific knowledge; when they were simply told, that nothing but stimulant and excessively invigorating powers, produced both the symptoms in question, and all the other symptoms in peripneumony and rheumatism; and nothing but evacuant and debilitating remedies removed them; and that the case was perfectly reversed in the diseases of debility, which nothing, but debilitating powers, produced, and nothing, but stimulant remedies, removed. They might, therefore, give what names they pleased to either set of symptoms: But, if they attempted to cure those of real debi-

there is often as great an inability to move a leg or an arm, as in a dead palsy. The same function is also most commonly impaired in rheumatism. Neither do we know any thing about the action of the heart, but in so far as we consider it in the state of the pulse; which has been explained in conformity with the proposition, to which we have called the attention of the reader. This being the true statement of the fact; the kind of proof induced to establish debility as the cause of spasm, taken from the consideration of the symptoms, falls to the ground.

CLIV. THE same proof is equally wide of his purpose, as taken from the consideration of remote causes. That these operate debility in intermittent*, as well as in continued

lity, by bleeding, evacuation, and starving, which was the practice of the doctrine they defended; and, for the cure of the symptoms where the debility was only apparent, used wine, opium, and other stimulants, they ought to be hanged.

* Elem. Med. DCL. DCLII. ad DCLVI.

fevers*, and in all diseases that merit the appellation of fever or febrile†, we heartily admit, and even grant, that the establishment of that fact is a most essential part of the fundamental principle of the new doctrine. But that a state of debility, arising from this source, takes place, as distinct from the morbid state, that constitutes the cold stage of intermittents, or any after part of these, or any part whatever in the course of continued fevers, we as confidently deny; and that upon the full proof, arising from the arguments, that disprove that pre-existent state, as inferred from the appearance of symptoms.

CLV. WE have now sufficiently disproved the author's boldly asserted fact,

* Elem. Med. DCLXX. DCLXXIII. DCLXXIV. DCLXXV. ad DCXC.

† Elem. Med. CCCXLVI. The diseases mentioned in CCCXLVII, are called Pyrexiae, to distinguish them, as depending upon increased vigour, from proper fevers that depend upon debility; a distinction, the neglect of which among physicians has been a principle cause of the universal depravity of the practice, as arising from the old doctrine.

that a state of debility, pre-existent to the first part of morbid state, the cold stage of intermittents, is the cause of the cold stage, and of all the after phenomena through the whole course of the fit. We have shown, that the proof drawn from the symptoms is invalid; both as applying equally to sthenic pyrexial diseases, which arise from excessive vigour, and are improperly, and with the worst effect upon the practice, denominated febrile*; and as, of itself, proving nothing at all. We have shown its equal futility, as inferred from the consideration of the remote causes †, these proving debility to be the whole and a direct cause, but not as indirect, and constituting spasm as the cause.

CLVI. DEPRIVED, therefore, of these two propes, upon which alone he rested the whole reasoning he had to bring in support of his conclusion; a conclusion so broad and extensive, as to be meant to

* See the last note.

† First Lines, XXXV.

comprehend a full explanation of the whole doctrine of fevers; he is obliged to have recourse to a bold assertion of his conclusion as a matter of fact. A matter of fact, according to the mode of proof which he has induced, it is now proved it cannot be. The next question, therefore, is, upon what footing does he expect, that we are to take it off his hands as a matter of fact?

CLVII. HE makes an apology for the risk he finds he runs of not "being able to explain in what manner, or by what mechanical means," his conclusion is to be supported; or, "these states severally produce each other*." With every step that we make in the review of this work, astonishment succeeds to astonishment. There are only three shapes, in one or other of which he can offer us his fact; that is, either as an axiom, a self evident truth; or as demonstrated by arguments; or as begged upon the credit of his own authority."

* First Lines, XXXVI.

CLVIII. THAT we are not bound to take it as an axiom, as a self evident truth; I suppose every one of our readers will most heartily agree. There is nothing on the face of a proposition, which sets forth, that the “three states, of debility, of a cold, and of a hot, stage,” in intermittent fevers, regularly and constantly succeed each other, in the order” just now “mentioned;” which, from that, “presumes, that they are in the series of cause and effect to one another;” and which “upholds that assertion for a fact, even although the explanation of the manner, or mechanical means” by which “these states severally produce each other,” should fail; there is surely nothing in such a proposition, entitling it to an immediate and unavoidable assent of the mind to the truth of it. On the contrary, in all the books of Alchemy, in all the responses of the Delphic Pythioness, in all the prophecies of Sir Thomas Leirmont, in all the metaphysics of John Duns Scotus, nay, in all the theories of physic, only excepting those, that we will meet with in this, and

other works of our author, there is not to be found a sentence so impenetrable to human intellect, so dark, so mysterious, so incomprehensible, and, as good sense, past all finding out. Though, therefore, we cannot demonstrate by reasoning its diametrical opposition to truth; yet we humbly conclude, that there is such an opposition between them; and doubt not of being joined by our readers in that conclusion, for the same good reason, by which they, as well as we, are compelled to conclude, that two and three make five, and do not make six; though, by demonstration, neither of us can either prove the former, or disprove the latter. That being the true state, of what he “holds as a matter of fact,” and the only view that it can be taken in;

CLIX. It follows, that it is not offered, at least, does not come before us, as a fact demonstrated by reasoning and argument: For, though he no doubt slyly meant to pass it, upon such as would take it from him, for a piece of demonstration, in consequence of

the feeble, though his highest, reasoning, displayed in the three foregoing paragraphs; yet the demonstration of the true cause of fever, being widely different from that which he strained so hard for, effectually prevents the appearance of his fact before us in the shape of demonstration.

CLX. SINCE this “matter of fact” (CLVII.) comes neither before us as an axiom (CLVIII.), nor as demonstrated by arguments; but, on the contrary, is, without demonstration, found to be the reverse of a self-evident truth; it is plain, that it is meant to be presented to the public, and such as it is, as a fact upon the authority of the assertor.

CLXI. UPON this occasion let me be allowed to translate a fragment of an observation from the same first edition of the *Elementa*, from which we so lately had occasion to borrow. It immediately follows that portion, which we translated and

transcribed before*: “And spasm, which it has been demonstrated, is not only foreign from” the nature of “fevers, but absolutely” a “non-existent” state in the animal economy, for a great variety of reasons mentioned, and referred to in the original, “is,” at last, “abruptly obtruded” upon the public, “as a fact and truth. Can any thing be true,” in the nature of things, “contrary to the clearness of reason, and the certainty of fact? Did Sydenham †; did the ornament of human nature, Newton, gain credit by assertions, and not by execution; the former,” by that of “his cures, the latter,” by “clear demonstration? Shall the last argument” of every dispute, “*be said it*, which, in a rude state of human science, was applied to the greatest man in

* See note at CLII.

† It must be added *in the few phlogistic or sthenic diseases* which depend upon too much vigour, and which are but a few of the whole; whereas, in the far greatest number, his practice was as bad, as that of his contemporaries, the Alexipharmac physicians, was in the few in the cure of which his whole merit lay. See above, *Outlines*, p. lxxiv. lxxv.

moral philosophy," and "not" even in these circumstances, "with a becoming propriety to him, be applied to such a person as this, forsooth, with a vengeance? Who is he*? Other physicians had often mistaken inferences from theory for facts, as in the case of the noted plethora, of the autocrætia, or vis medicatrix naturæ, and many others; but these were received as such by a general agreement among physicians, and not asserted upon any single authority.

* The idiom of the Latin leads to speak in the second person singular, when in English, the third person of the same, or of the plural, number, is commonly employed in the same sense. This observation is necessary to some readers, whose profession should place them above the occasion for it, and particularly to let them know, that the dignity of a great subject is not to be let down for the little-minded gratification of personal attack. In the *Elementa* no such person as Dr. Cullen is known, unless that there, as well as here, upon the particular subject of spasm he is comprehended as a professed modifier of that doctrine in some parts of his theory. As some of our readers may be desirous of seeing the original, it is as follows: "Et spasmus, qui, quod dissentio necessaria deest (CXV.), quod propriis is argumentis (CXVI.) conciditur, quod contrarius (CXVII. p. 105. 106.) credito ejus effectui status occurrit, quod noto opportunitatis statui (CXVIII.),

They were errors, indeed, and gross ones, as we are afterwards to show; but they were errors upheld by the united influence of the greatest names of the profession, and that had been countenanced at all times, and in all countries, to which the Greek art of medicine had extended, almost without being called in question. They were errors of great antiquity, having been ushered into the world in the writings of

noto noxarum excitantium, et auxiliorum, operi, idem discrepat (CXVIII. p. 107. 108. 109.), quod in eo doctrina traditur, ubi noxae excitantes et remedia, causa et consilium, non solito modo (CXIX. p. 110.) inter se opponuntur; ubi nullum noxarum, nullum remediorum, commune opus, reperitur, contra omnia omnibus dissident (CXIX.); ubi nihil novi, nihil proprii adfertur (CXX.), sed priores errores verbis dissimulantur, re adsciscuntur, et amplificuntur; non solum a febribus alienus, sed non omnino, esse (CXVI. ad CXIX.), demonstratus est, abruptim tandem, tanquam res vera, obtruditur. Ecquid verum contra rationem claram, res certas, esse potest? Ecquid Sydenhamus, ecquid generis humani decus Neutonus, dicendo, et non, ille curationibus efficacibus, hic demonstratione clara, fidem invenerunt? An ultimum argumentum, το αὐτος εἶπεν, in rudi humanae scientiae statu, maximo in moribus viro male decenter adhibitum, tibi, scilicet, si diis placeat, adhibendum? Quis tu es?"

Hippocrates: But since the days of this author and of Socrates, who both enjoyed the implicit belief and acquiescence of their hearers in most parts of their doctrines, no one, with the exception only of this author, has pretended to pass an inference from theory upon his readers or hearers for a fact. We need not repeat from what sort of theory it is an inference.

CLXII. BUT, it is further here a matter of curiosity to observe, how completely our author gropes in the dark upon this occasion, that required the utmost illumination, and his, at least, having all his wits about him: He seems to be in the most perfect ignorance of what constitutes a fundamental fact; which is not explanation, but proof: For, besides that such explanations as his are sufficient, instead of recommending, to damn any fact; it must be recollected, that explanations of any kind must be banished from every fact, which is meant for the foundation of a scientific

doctrine*. Gravity, constantly acting upon bodies once put in motion, without being explained, is sufficient to explain the system of motions that takes place in the revolutions of the planets around the sun†. Excitability, acted upon by the exciting powers, without any explanation, also sufficiently explains the functions of life in every living being, animal or vegetable, upon this terraqueous globe. And as the former proposition seems to extend to every solar system through the infinity of space; so the latter seems to be of equal universality, with respect to the kind of life, to which only it is applied. Sir Isaac, were he to return to his former state upon earth, would regret the occasion he inadvertently gave to the absurd explanations of gravity, that have so much confounded science since his death‡. And, if any caution, any warning, can be sufficient to guard the

* Introd. p. xix. to the xxxii.

† Introd. p. liv. to the lx.

‡ Introd. p. xxi. xxii.

minds of men from the indulgence in such abuses; instructed by that and many other examples, the author of the doctrine of life has been careful to provide his followers with the proper cautions*: To a fact, therefore, extended no further than, to serve as a fundamental proposition in explanation of the cause of fevers, no more was requisite, than to prove its truth and application to that extent; which being done, all explanation, as it has no other effect, but the bad one that has been pointed out, instead of being anxiously desired, was to be carefully guarded against. It is much to be regretted, that, in the avidity of mankind to grasp at systems of knowledge, they are hurried forward by such a blind impulse, as almost never to consider either the extent of their own powers, that of the subject†, or the proper means of attaining their ambitious aim‡. Here we have an instance of an

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* Introduct. p. liv. to lviii.

† Introduct. p. i.

‡ Introduct. p. xix. 2d. par. and xx.

attempt to establish the proximate cause of fever, or of “an endeavour to make an approach towards it,” by an author in perfect ignorance of the general nature of fundamental cause, and divested of every idea requisite to a proper conception of it.

CLXIII. YET, like a person completely bewildered in a journey, and proceeding, notwithstanding, in that direction, which his deluded imagination suggests, till there is no end of his wandering; our author, in his next step*, plunges into inextricable confusion, and engulphs himself in the profound abyss of the *vis medicatrix naturae*. From the bottom of which the words sent up are: “How the state of debility produces some of the symptoms of the cold stage, we cannot particularly explain, but refer it to a general law of the economy, whereby it happens, that powers which have a tendency to hurt and destroy the system, often excite such motions, as are

* First Lines, XXXVII.

suited to obviate the effects of the noxious power. This is the *vis medicatrix naturae*, so famous in the schools of physic; and it is probable, that many of the motions excited in fever are the effects of this power."

This

Vis Medicatrix Naturae.

CLXIV. **H**AS been the most jaded being of all others: Sad has its task been among the sectarians in medicine, at all periods, since the first accounts of the profession. Old Hippocrates, whenever he was at a dead stand, and had exhausted all his skill, constantly left his cures to the *vis medicatrix naturae*. The same being, or genius, of whatever gender you suppose it, or by whatever name you call it, was the chief dependence of the Sthaalian physicians*.

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* A sectary of physicians, who maintained, that the cure of diseases, was to be entrusted to the wisdom of nature, or of the constitution. They were so named from their leader the celebrated Sthaal, a professor of medicine and chemistry, in Berlin, in the beginning of this century.

The corpuscularian physicians* depended upon it, as often as the remedies, suggested by their indication of cure, failed, which, we may believe, was not seldom. It made a figure in the doctrine, which taught that *lensor*, or spissitude of the blood, was the cause of disease. And, as we might otherwise well suppose, the chemical system of physic, which referred all diseases to the prevalence of an acid or alkali in the fluids, would very frequently find great convenience in a reliance upon this pliant principle, or whatever it is to be called; for I am utterly at a loss how to denominate it. Last of all, it is brought in, to act a part no less important, than that of producing the spasm, which is supposed to be the cause of fever, and, as we shall by and by see, of the sthenic pyrexiae, or diseases,

* Another sectary of physicians, whose fundamental tenet was, that certain angular pointed bodies formed the diseased state, and that the changing their form to round, or ejecting them from the system, restored the healthy state. *Introduct.* lxx, lxxi.

erroneously misnamed febrile; while they depend upon a cause the very opposite to that which produces fever.

CLXV. OUR author's embarrassment is here inexpressible. He is at a loss "particularly to explain how the state of debility produces some of the symptoms of the cold stage." We would excuse him all this anxiety about explanation, whether general or "particular, if he had proved his proposition to be a fact." But, as we have proved it to be a fiction, it is no wonder that he should be at a loss to explain it. If it is often neither easy nor wise, to explain facts that are established upon the sure basis of certain proof; how great must the difficulty and folly be of the attempt to explain non-entities? The true phenomena of nature can never unite in proof of a thing that has no real existence in nature, in an *ens rationis*, a mere production of imagination. If the most fundamental proposition of the new doctrine be true, that we are nothing of our-

selves, but in daily, hourly, and momentary, dependence upon external powers*: If our natural tendency is to death†, or the dissolution of that system, the living state of which is kept up by external powers acting upon the excitability (VI. X.): If we are weak and sickly in proportion to the subduction of the external powers, or their ultimately excessive application‡; and strong and healthy in proportion to their application within a certain limit§: If no regard is due to the united testimonies of physicians, from their ignorance of the nature of the animal, as well as every other, living economy, and from the false notions into which their wrong method of cure could not fail to lead them: If the explanation of the same animal economy according to the new doctrine, and the surprising efficacy of the remedies, which it suggests, have proved beyond a doubt, that morbid

* Outlines, i. to the v. vii. ix. x.

† Elem. Med. LXXII.

‡ Outlines, xvii. xxiv. xxv. xxvi.

§ Outlines, xi. xiii.

state always depends either on debilitating powers, whether of the direct or indirect kind, or on excessively invigorating and stimulant ones; and that the hurtful effect of either set of powers is removed by the salutary operation of the other (VII.): If, in short, the healthy state takes place, because powers are applied both proper in kind and in due proportion; while the diseased state is occasioned by the deviations that have been mentioned; and all that, without any visible interposition of any power in the constitution to alter their effect: Lastly, if neither in health, nor in predisposition, nor in the greatest number of diseases, (for the *vis medicatrix* has been alledged chiefly, and almost only, to interpose in fevers), this imaginary power was ever once dreamed of; and if no sort of proof has ever been brought of its real existence in any case: What credit is due to the assumption of such a power, instead of the solid proof, that a question of such importance, as the cause of fevers, “after eluding the

research of other physicians," might be expected to rest on?

CLXVI. THIS power, supposed to be inherent in the constitution, of correcting morbid tendency, and of possessing an influence tending to restore the healthy state, has, under different denominations, and in different degrees of its supposed energy, been interwoven in the composition of almost every system of physic. In the work of the fanatic Van Helmont, as a little genius, enthroned on the upper orifice of the stomach, it gave laws to the whole system; sometimes variously raising, at other times allaying, a state of commotion over all. In the language of Sthaal, the same thing by a term, less ridiculous than that of the Archaeus, was expressed by the wisdom of the soul, exercised in discerning between motions of salutary and hurtful tendency, and in providing accordingly for the safety of the system. It has been as variously considered, reconsidered, viewed in different lights, adopted, rejected, re-

futed, refuted, and defended again. But, while every criticism upon this doctrine from systematic reasoning, equally erroneous and remote from the truth as itself, must, for that reason, fall short of a just refutation; it is hoped that

A Refutation of Sthaalianism

CLXVII. “UPON right principles, as delivered in the first edition of the *Elementa*, will not be an ungrateful present to our readers. “There is in other animals as well as man, a certain propensity, appetite, and antipathy. Hence arise many desires, many aversions. Rest is the object of desire to a person fatigued, and labour the pursuit of one who is languid with inaction. The desire in hunger is for food; after fulness, loathing takes place of appetite. Thirst begets an ardent desire for drink, and the quenching of the former produces an aversion to the latter. A person when cold wishes for heat; when

hot, for cold. When one is tired with thinking, his propensity is to amusement; when fated with amusement, his bent is upon thinking again. One inflamed with anger, hatred, or love, is roused to revenge, mischief, or the endearing embrace; and he becomes heavy and inactive, when these passions are fatiated. These things happen without any exertion of reason or of wisdom, and even without consciousness, or any judgment of the end, good or bad; nay, they happen in spite of a man. They arise from a certain feeling, more or less distinct or obscure, of the present condition of the body," as being more or less pleasant or disagreeable. "They are not a consequence of the superintendence of a thinking faculty, their only cause being a certain conformation of the animal frame, producing in it a disposition to them," "different as the conditions are different. No body owes his desire for food to the intention of being nourished, of preserving his health; that," instead of a

cause, being only an "effect," which "we come to the knowledge of by education and experience: The object" of appetite "is to remove an ungrateful, and acquire a grateful feeling: Reason, therefore, and judgment, have no concern in this operation. The whole is governed by blind instinct, arising, by a law of necessity, from the state of the system. But the action of even that instinct is not exactly right in any part of its operation; or, if it were, no disease, no predisposition, would take place for a great part of life." Under a proper action of the instinct, "the desire for the exciting powers, as well as their application, would be so perfectly exact, as to prevent aberration into either extreme. There would be no excess" in their application, so as to lean "in its effect to sthenic diseases, or a predisposition to these: There would be no" ultimate excess, or "defect, so as to produce a tendency to the other form of diseases or predispositions. By an operation of the exciting powers, most perfectly accommo-

dated to the safety of the constitution, the exhaustion of the excitability would proceed in a gradual, uniform, and gentle manner, and, as it were, by "stolen and "silent steps." A long time would this process "go on, and, at last, without an effort, without a struggle," without a pang, "gently and calmly give way to a late termination in death. Widely different is the" true "state of the fact: There is scarce one instance in ten thousand of a life spent throughout, according to the description just now given." The event, with respect to all the rest of mankind, bears testimony to the mistake of the doctrine, that maintains that the motions of the system are directed by a wise intellectual power.

CLXVIII. "BUT neither is there any proper measure observed in this blind instinct, these vague appetites. The desire for the exciting powers, as well as their application, is" sometimes "in excess," sometimes in "underproportion. What is luxury,

but an immoderate desire for food, drink, defarts, venery, and other elegant gratifications? What is indolence, but an aversion” in some “to what is so agreeable to others, corporeal motion, in consequence of inactivity, and still more from habitual inaction,” or sedentary life? Who governs his passions as he ought? How often is cold, how often is heat, hurtfully applied, without the consciousness of the person affected? Few even taught by experience, are such masters of the golden mean of mental exertion, as not to hurt themselves sometimes by an excess, sometimes by a deficiency in it. Yet all these are a perpetual and daily source of diseases and predispositions.”

CLXIX. “IN none of them, however, does the wise governing principle interfere to prevent the hurtful effects. Why does it come to the relief of health when brought into danger, and not with the first opportunity? Why does it step forward to obviate ultimate danger, and not rather prevent the first tendency? Every day exces-

five indulgence in food, in conjunction with other hurtful powers, paves the way to sthenic diseases, or actually produces them; while abstinence has, as often, the same effect, with respect to asthenic diseases and predispositions. As the wisdom of the mind does not prevent, but on the contrary, permits, the commencement, increase, and completion, of all diseases to take place, through all the intermediate degrees, from their minutest origin, to the last part of their progress: In order to prevent them, what hurt will it do, to lower or increase the aliment," either in quality or quantity? Are we not, what by medical, what by moral precepts, to make head against luxury and sloth, which, from excessive or deficient excitement, directly or indirectly, occasion the greatest number of diseases among people in polished life? Again, are we to allow, cold, labour, and low diet, which have at all times, and in all nations, affected the poor with diseases of direct debility (XV. XVI. XVII.), and still do affect them, to proceed, without checking the havock

they make ; and are we to set no plan on foot to prevent such havock? It will be granted, that diseases are to be prevented; and if so, there will be seldom use for the judgment of the wise intellectual directrix, even in the health-bringing piles.”

CLXX. “FURTHER, if the same powers, which produce the predispositions that have been mentioned by a lesser degree of their action, by a greater produce diseases; does any objection to the removal of them in the same manner, arise from sound reason, or from a practice of cure, warranted by any sort of success? If there is an appetite for food, which is often the case in sthenic diseases; must food for that reason be given? And are we to suppose, that the attention, which proved of service in the predisposition, will prove hurtful when disease has taken place; and,” on the contrary, “will not now be even absolutely necessary? Are we not to let blood in a peripneumony, and that liberally? And, because” the use of “that”

remedy “may be often superseded in slighter affections of that sort, should a person, who labours under a cold, an inflammatory sore throat, indulge in banqueting with the Lord Mayor and Aldermen of London upon some high occasion of festivity; and not rather stay at home, and fast, sweat, take a purge, and use other proper means? Nay, if a rich and full diet, in conjunction with other hurtful powers, produces the haemorrhoides or piles itself, and low diet prevents the disease from coming on*, must the latter among other remedies,

* This is rather a mistake, which, at the time he wrote the first edition of the *Elementa*, the Author had not yet fully corrected. He remained still so much in the old opinion, with respect to the bleeding diseases, as to allow them to be sthenic in their first attack; though, even then, he perceived, that they soon degenerated into asthenic diseases, and that, indeed, as early as the first evacuation of blood, either by the lancet, or disease. Since that time, however, he has completed the correction of the pernicious theory, respecting bleeding diseases; having found them, in their state of predisposition, and through their whole course, to depend upon penury of blood, and debility from that, as well as all its other sources. He admits, indeed, that an overproportion of blood, as well as of any other hurtful power, may produce the

be omitted, and the former indulged in, that an opportunity, forsooth, may be given to the wisdom of the intellectual faculty to prevent other diseases, by increasing and keeping up this" very nasty and troublesome " one? God forbid! would be the voice of common sense. In the same manner, must the same pox and measles be left to the nod of this governess of" human " health, and nothing be granted, in the former to cold, and in the latter, to antiphlogistic regimen*? Must loose reins be given even to the rage of mania†, to humour this wise directrix? And, whether it was occasioned by intense exertion in thinking, or by drunkenness, or by unaccustomary sobriety succeeding to this, or by grief for disappointment in

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commencement of these diseases; but the moment that that takes place, he has shown, that all is debility, and the cure only stimulant. See above xlvii.

* That cold, and the other parts of the antiphlogistic regimen, are equally the proper plan of cure for the measles, as for the small pox, has been one of his many discoveries since he wrote this.

† or madness.

any great expectation, or by other means of excess or defect" in the application of the exciting powers: "Are we to attempt no management of an opposite nature to the effect of these" hurtful powers?

CLXXI. "LIKEWISE in the gangrenous sore throat, in the typhous fever, in the plague itself, which are forms of fever occasioned by debilitating powers preceding them, depending upon debility as their cause, and cured by stimulant" remedies; "are we to discharge the patient from the use of the latter, because this governess, which watches over the health of the system, does not give the signal? And must even beef soup, and wine," because the patient does not desire them, not be given, to fortify the system against duration of the disease, to prevent its increase, and to provide by such and other proper management against future consequences? If a considerable stimulus of this sort is necessary to the life of a robust, sound, person, is a lesser stimulus to be denied to persons very

highly weakened, and therefore in so much more need of it? If all life depends upon stimulus*, and if deficiency of it is a most plentiful source of diseases†, are we not in” all “these to give as much stimulus as possible; and the more for this reason, that besides reasoning, certain fact has established its utility? If luxury and sloth, by stimulating in excess for a long space of time, but in an agreeable manner, and then, after exhausting the excitability, passing into indirect debility, can be proved to produce the gout, the indigestion of old persons, asthma, epilepsy, palsy, and apoplexy, and in that way to conduct most rich men and others to their graves; and if reason and experience have shown, that stimulants sparingly given, and not direct-

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* Outlines, v. vii. viii. ix.

† The diseases arising from this source, as well as from ultimate excess, though never discerned by physicians, are in the proportion of ninety-seven out of the hundred, to all the rest of the diseases incident to humanity.

ly debilitating powers” according to the established practice, “are the” proper “remedies: Must we also forbid the” moderate use of the “former, because persons, who have been accustomed to them, cease not to long for their use in an hurtful excess? In fine, if there are bleeding discharges, depending upon debility, often arising from sthenic diseases*, converted into those of an opposite nature, by” means of “indirect debility, and sometimes occasioned by direct debility: If rheumatism and other sthenic diseases, accompanied with inflammation of a part, often pass into” those of “an opposite nature; and if affections, similar to these, often arise from another source, and which is not sthenic: In all these cases, because bleeding, and an antisthenic plan of cure, which were the proper remedies in the” sthenic “cases, do not suit the asthenic, as we readily grant,” though “in contradiction to the common practice; must we also not proceed,

* what the Author now calls sthenic; are diseases arising from too much stimulus.

to a certain extent, in the use of stimulant remedies, to which experience has also given its sanction, and enjoin a tonic diet and exercise? Lastly, to omit nothing of consequence in the whole "circle of diseases; if all the debilitating hurtful powers are concerned in the production of dropsy," considered as "a disease of the whole system*, and if" no remedies, but "stimulant prevent, and, unless it has gained ground by neglect, remove it; are we also not to attempt its cure, as often as that is in our power? Or, should we rather wait till death comes on, which, without the interposition of medical aid, would certainly happen, and then lay the blame," not "upon" want of wisdom in "the governing principle," but upon its "being overpowered?" If perfect health in every respect seldom happens to mortals; if the stimulus of the powers applied to the sys-

* There are collections of water from local causes, which are to be considered as local, and therefore essentially different from universal disease. Outlines, xxxvii. xlii. lxxi. to lxxviii. cxxxiv.

tem, are seldom so wisely adapted to it, as to prevent its producing either excessive, or deficient excitement; and if, therefore, every deviation from the most perfectly sound state, in either direction, is the same in kind*, as" that of the most violent disease: Will not any" reasonable "person grant, that every power," allowing for a moment that there is such, "whether corporeal or mental, should equally interpose at the most early commencement, as at the extreme termination," of the morbid state, or more so; and cure the affection rather at that period when it is easily overcome, than at that, when it is difficultly, or not at all to be, removed, and" thereby "prevent its rising to actual "disease?" But, as matters have hitherto gone under the direction of this "intellectual governors of the motions of the system, is not her wisdom like that of a governor, who deserts his garison, when the arms of an enemy thunder around it, and keep it under an accurate block-

* Elem. Med. IX. X. LII. to LX.

ade, and then steps forth after it is storm-
ed, in the very act of surrender? Your an-
swer to all this, Dr. Sthaal, or that of your
pupil Juncker, if either of" you have
any to make*.

* Dr. Sthaal did not give his works either medical or
chemical in writing himself, but attested copies of both, done
by Juncker.

XCIV. "Est in animalibus aliis et homine impetus qui-
dam, appetitus et averfatio. Hinc multa cupiuntur, a multis
animus abhoret. Fessus quietem, hoc languens laborem,
quaerit. Jejunus cibum desiderat, satur fastidit. Sitiens
potionem ardet, extincta siti, poculum rejicit. Frigidus ca-
lorem, frigus calidus, expetit. Cogitando lassus ad oblec-
tationem ruit, cujus pertaesus illam rursus repetit. Ira,
odio, amore, flagrans, ad ultionem, maleficium, dulces am-
plexus, concitatur; quibus expletis adfectibus, hebescit,
quiescit. Haec, nulla ratione, nedum sapientia, ac ne qui-
dem mentis conscientia, aut ullo finis, boni, mali, judicio,
ulla salutis cura, quin et invito homine, fiunt. Quodam
corporis conditionis praesentis, jucundae aut injucundae, sensu,
clariore, obscuriore, nascuntur. Non praeside mente, tan-
tumque, fiunt, quia fabrica animalis ita conformata est, ut
eam conformationem, sub alia conditione aliter, necessario
consequantur. Nemo sua sponte cibum eo consilio desiderat,
ut corpus alatur, ut valeat; qui effectus tantum disciplina aut
experientia cognoscitur, sed, ut injucundum sensum amoveat,
jucundum assequatur. Ratio igitur et prudentia ab hoc opere

CLXXII. It is hoped, that this refutation of Sthaalianism is the more complete, that it is not, which has been the

abest. Totam regit caecus impetus, e corporis statu, necessitatis lege, fluens.

XCV. Sed ne hic quidem, in ulla operis sui parte, recte prorsus agit; aut, si ageret, nullus morbus, nulla in hunc opportunitas, per magnam vitae partem, existeret. Ad amissim potestates incitantes adpeterentur, adpetitae admoventur, ut in nutram partem incitatio inclinaret; non superaret, et ad morbos sthenicos vel eorum periculum vergeret; non deficeret, et in alteram speciem five morborum five opportunitatum deflecteret. Sola incitabilitas, aptissimo saluti potestatum incitantium opere, paulatim, aequaliter, leniter, et tacito quasi gradu, post longum tempus, exhausta, absque nisu, absque lucta, placide et tranquille demum, serae morti cederet. Sed longe aliter res se habet. Ne singuli e denis millenis sic agunt, sic exigunt, vitam. Reliqui omnes doctrinae, sapientem mentem corporis motus dirigere tradentis, erroris, testimonium certum dicunt.

XCVI. Nullus caeci impetus, vagorum adpetituum, modus servatur. Adpetuntur pariter et admoventur potestates, aut nimis, aut parum, incitantes. Quid est luxus, nisi immodica cibi, potionis, secundae mensae, veneris, et aliarum voluptatum elegantium, cupiditas? Quid est desidia, nisi a motu corporis, quo alii adeo delectantur. abhorrens per inertiam, magisque consuetudine quietis, voluntas? Quis, ut decet, animi adfectibus moderatur? Quoties frigus, quoties calor, non conficio qui adficitur, nocentur admoventur? Pauci vel experientia

case in all former attempts, a criticism upon an erroneous system from false principles, but a complete exposition, naturally

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docti, auream mentis utendae mediocritatem adeo callent, ut non, quandoque nimis, saepius non satis, cogitando, sibi noceant. Quae tamen omnia perpetua et quotidiana morborum et opportunitatum origo sunt. Cur saluti labanti, et non quam primum, illa sapientia succurrit; cur extremo discrimini et non primo se opponit? Cibi quotidie supra verum indulgentia, cum aliis noxis excitantibus, ad morbos sthenicos; abstinentia ad asthenicos, viam vel ipsos, facit, factos auget. Cum id sapiens animus non prohibeat, contraque, omnes morbos a primo semine ad extremum fructum nasci, crescere, et maturefcere, sinat; quid, ad iis occurrendum, alimentum, prout res postulet, imminuere vel augere, nocebit? Annon luxuriae, annon desidiae, quae, aut nimis, aut parum, recta, eventu, incitando, maximam apud mortales, in vitae cultu aevum transigentes, morborum turbam concitant, qua medicis, qua veri praeceptis, obviam eundum? Rursus, quae omni tempore, in omnibus gentibus, pauperes rectae debilitatis morbis implicuerunt et implicant, frigus, labor et victus tenuis, an impune grassari finenda, et prohibendi effectus eorum ratio nulla instituenda? Prohibendos morbos dabitur. Et, si dabitur, mentis sapientis consilio, etiam in salutifera haemorrhoidae, rarius opus erit.

XCVII. Porro, si eadem, quae opportunitates relatas (XCVI.) actione minore, morbos majore, faciunt (XXIX. XXXII.); quae ratio bona, quae felix curatio, similiter, ad eos solvendo, insistere vetat? Si cibus, ut saepe, in stheni-

arising from a just view of the animal economy, either in its sound or morbid state. The former sort of animadversion is only a

cis morbis desiderabitur, an ideo dandus erit; et, quae cura in morbi periculo profuit, ea, hoc jam facto, nocitura, et non etiam nunc demum necessaria futura, credenda? An sanguis in peripneumonia non mittendus, fundendus? Et, quia ejus missioni in levioribus ejusdem notae morbis saepe superfederi potest, an cum Consule et Praetoribus Londinensibus festo tempore illi epulandum, qui catarrho, qui cynanche tonsillari, laboret, et non domi jejuno manendum, sudandum, alvi purgationem subeundum, et convenientia alia facienda? Quin et, si ipsam haemorrhoida, cum aliis noxis excitantibus, victus lautior, conjuncto opere, faciat, tenuis futurae occurrat; an hic inter alia auxilia ideo omittendus, illi indulgendum, ut mentis, si dis placeat, sapientiae, hunc morbum augendo, servando, alios prohibendi occasio detur? Sensus communis, di meliora veliat, precaretur. Pari modo, an variola, an rubeola, praesidis huic salutis nutui relinquenda, nihilque in illa frigori, in hac curationi antisthenicae, tribuendum? An ipsius maniae furori, ut sapienti rectrici mos geratur, habenae laxae permittendae? Et, five cogitandi contentio, five ebrietas, five post hanc insolita sobrietas, five animi, magna spe dejecti, dolor, five alia eam, nimis aut parum incitando, fecerint; illis contraria administratione nihil attentandum?

XCVIII. Item in cynanche gangraenosa, in typho, in ipsa peste, quas febris formas debilitantia antecedentia faciunt, debilitas causa continet, stimulantia juvant; an his aegrotanti,

comparifon of one false doctrine with another; the latter is a comparifon of error with the truth; the former is a meafure-

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quia fignum non dat illa faluti invigilans imperatrix, interdicens, et vel jufculo bovino vinove, queis, in morbi debilitantis longitudinem, mature vires muniantur, crefcenti malo occurratur, et in futurum profpiciatur, quia non defiderantur, abftinendum? Si robufti, fani, vitae magnus hujusmodi ftimulus neceffarius eft, an minor, fum mopere debilibus, eoque magis illo egentibus, negandus? Si omnis vita in ftimulo pofita eft (VI.), ifque deficiens numerofa morborum origo; an in his morbis, quantum ftimuli adjici poteft, non adjiciendum, eoque magis, quod, praeter rationem, talem ufum certa res firmavit? Si luxus et defidia, diu nimis, fed jucunde, ftimulando, dein, poft longum fere tempus, exhausta incitabilitate, in noxam, eventu debilitantem (XX.), tranfeundo, podagram, dyspepfiam fenilem, item afthma, epilepfiam, paralyfin, et apoplexiam, facere, eaque via plerofque divites et alios ad tumulum deducere, demonftrari poffunt; et non recta debilitantia, fed parcius ftimulantia, auxilio effe, ratio et experientia confirmavit: An his quoque, quia per confuetudinem nimis et nocenter ftimulantia adepti non definunt, obftinendum? Denique, fi fanguinis profluvia funt in debilitate pofita, faepe a fthenicis, in contraria per indirectam debilitatem (XX.) mutatis, aliquando a recta debilitantibus noxis (XXII. XXIII.), oriunda; fi rheumatifmus, et alii cum inflammatione partis morbi fthenici, haud raro in contrariam naturam tranfeunt, iifque fimiles adfectus, fine fthenica origine, aliunde

ment regulated by an erroneous, the latter by a just standard. And even in that false point of view, all former animadversions

saepe nascuntur; ut sanguinis detractio et curatio antisthenica, quae in illis responderunt, his non convenire, contra vulgatum usum, facile hic conceditur, ita stimulantibus, quae experientia quoque probavit, auxiliis, quodam tenus insistere, et tonicum victum cum exercitatione praecipere, etiam non oportebit? Postremo, ut nihil, in morborum orbe, paulo memorabilius, praetereatur, si omnes noxae debilitantes hydropem, idiopathicum intellige, faciunt, stimulantia prohibent, et nisi neglectus invaluerit, solvunt: an huic quoque mederi, quoties facultas erit, non tentandum, potiusque mors certa expectanda, et in oppressam praefidis sapientiam culpa conferenda? Si solida ab omni parte valetudo raro mortalibus contingit, raro rerum, corpori incumbentium, stimulus ei tam apte accommodatur, ut aut non nimis, aut non parum, incitet, eoque omnis, a sanissimo statu in utramvis partem, recessus, idem genere status est ac gravissimus quivis morbus; nonne omnem facultatem, sive corporis sive animi sit, primis principiis aequae, ac extremo fini, magisve, interesse, maloque tum potius, cum facile, quam sero demum, cum difficile, superatu, aut omnino insuperabile, est, mederi, et justo occurrere morbo, debere concedes? Nonne regentis corpus mentis sapientia ejus praefecti similis est, qui, circumtonantibus hostium armis, arcta obsidione clausum praesidium deferit, in expugnato demum, et media deditione proditurus? Si sit quod ad haec respondeas, responde Sthaali, aut jube Junckerum."

upon this doctrine of a wisdom in the constitution governing its actions, were necessarily partial and limited. The complete rejection of Sthaalianism would come with an ill grace from any sectarian hitherto, who, upon the most urgent occasions, had often nothing else to depend upon for making out his cure. Hippocrates, as we have said*, often professedly relied upon it. The feeble attempt of his immediate follower Hierophilus†, and the scarcely more effectual one of Galen, to increase the number of articles of cure, by no means superseded the demand for the *vis medicatrix*. It is not to be expected, that the success of the professedly irrational and unprincipled practice of Serapion, and his empirical followers‡, would be above the occasion for recourse to it: And, though Asclepiades borrowed his proxi-

* Outlines, lxviii. lxxv.

† Outlines, lxviii. lxix.

‡ Outlines, lxxviii.

mate cause, as well as his indication of cure, from a philosophical system, that denied the interposition of an intellectual principle in the government of the universe, and that therefore did not naturally lean to that supposition in the animal economy, or individual living systems; at the same time no such light could arise from this erroneous modification of medical doctrine, as to lead to the conclusion which we here mean to establish. Whatever was their reasoning, the appearance of the fact, though false, and such as had deceived so many others, could not fail to influence them in the belief of its reality in one point of view or other. The mechanical explanations of the functions of the animal economy, that arose upon the discovery of the circulation of the blood, all led to such false and imperfect views in the several modes of cure, as to create a necessity for the belief in this principle. If, upon mechanical principles, the blood, according to a notion that has been very general among them, determined its motion in dif-

ferent directions, and thereby produced diseases, and, at other times, assumed opposite directions, and thereby effected their cure: What was all that but assuming the fact, only denying its cause as originating in wisdom and intention? It was plainly saying, which was worse than saying nothing, that the system was so made, that the mechanism of the animal economy was such, as to possess a power in itself, independent of those to which it is now demonstrated its ordinary actions are owing, of sometimes inducing diseased state, (for they had their *vis destructrix*, according to the barbarous language of some of them, or their *vis morbifica*, as well as their *vis medicatrix naturae*), and, at other times, of repelling it, and reproducing the healthy state. In this there was no difference; it was still the *vis medicatrix naturae*: Only the other was a rational, this a mechanical, *vis medicatrix*. The indication of the chemical practitioners to cure a morbid state consisting in acidity by alkaline substances; or, when the morbid fault was

alkaline, by acid means, could never inspire even them with a persuasion, that it could go any length, without great help from the *vis medicatrix**. The same reliance on which was equally necessary to the Corpuscularian doctors, and therefore equally unavoidable. Boerhaave's lentor, his acrimony and projectility of the blood, as well as all the other morbid states, which that celebrated eclectic author borrowed from other doctrines, led to nothing so complete in the curative part as to furnish the most obscure conception of the principle held forth in the new doctrine; that health, disease, every deviation from the former, every approach to the latter, through all their varying degrees, arise from the operation of the exciting powers upon the excitability†. And although Dr. Sydenham, in the few sthenic diseases to which his mode of cure was imperfectly adapted, had proportionally less occasion

* Outlines, lxx. lxxi.

† Outlines, lxxii.

to take up the hypothesis of a *vis medicatrix naturae* ; yet his equal ignorance of asthenic diseases with every other physician, rendered him, in every one of them, equally obnoxious to that otherwise universal delusion. Accordingly no medical work is more crammed with it than his. In short, it is only a perfect acquaintance with the true nature of life, that can open the eyes of practitioners to the perception of an absurd piece of theory, which, under the pretence of a venerable fact, has, at all times, run away with all their senses.

CLXXIII. WHILE such is the universal reception that has been given to the *vis medicatrix naturae*, and such are the lights, in which it has been viewed, and the various uses in practice, as well as theory, that have been made of it; in returning from a long, but we hope, useful digression on that subject, to

The Continuation of the Subject of Spasm;

CLXXIV. WE have next to observe, that the application, with respect to it, of the vis medicatrix naturae, is an addition to the variety of uses, that have been made of it. According to most authors, it was an effort of some power or other, such as we have mentioned, to relieve the system from the oppression and tendency to death, which disease induces: According to our author, it is the cause of spasm, which is the cause of the disease. In their view of it, the effort only took place, after the disease was so much advanced in its progress, as to threaten immediate danger to life: In his, it occurs before the commencement of the disease, that is, before the arrival of the cold stage, which he considers as the beginning of the disease: For he will surely not alledge, that the disease is begun before the spasm is formed, that is, that an effect can precede its cause. Here again

we have occasion to turn the attention of the reader to his supposed pre-existent state of debility, by observing, that as debility, only by means of the vis medicatrix, produces the spasm; and as the spasm is the cause of the disease, consequently the debility, as a part or "state" of the disease, has no existence. It is only a circumstance, or part of the cause, concurring with another circumstance, or another part of the cause, the vis medicatrix, to form the whole cause. Till this, therefore, that is, the whole, the complete cause, takes place, it is evident, that no part of its effect can take place, and therefore that a state of debility, supposed to be one of these parts, is, from his reasoning, to be held as no part of the disease.

CLXXV. HE next observes, that "by a general law of the economy, it happens, that powers, which have a tendency to hurt and destroy the system, often excite such motions as are suited to obviate the effects of the noxious power." This pro-

position has received its sufficient answer in the refutation of the hypothesis of a *vis medicatrix naturae* in every one of its statements, and particularly in that of Sthaalianism. But, to take this absurd supposition out of the way for ever; we would ask, What the powers" are, that "have a tendency to hurt and destroy the system," and that "excite such motions as are suited to obviate the effects of the noxious power?*" "The powers, that, upon any occasion, operate on us, have been enumerated †, and are known; and the question is, which of them are here meant for hurtful ones; which, in either excessive or deficient application, they may all be? I would ask a single instance of any one power, operating with hurtful tendency, and, in the progress of that operation, converting its hurtful effect into a salutary one.

* The reader would expect here to read, "excite such motions as are suited to obviate *their own effects*." This professor's language is far from being accurate, or even proper; but it is good enough for his matter.

† Outlines, ii. iii.

CLXXVI. By taking nourishing food, and a proper quantity of generous drink, one will be strong: Ultimate excess*, or too little†, will weaken him: But when weakness has once been induced, Is there in the whole records of human observation, or in the whole collection of daily experience, a single example of an acquisition of strength, while the debilitating power continued? Did ever a man who had been accustomed to live well in eating and drinking, after dropping that diet, and weakening himself with the contrary, so long as he continued the practice, become strong again? In what circumstances of diet was it, that the students of medicine used to run about the streets of Edinburgh, and break lamps? Was that riotous activity the effect of eating vegetables, and drinking

* Elem. Med. CXXIV. CXXV. CXXVI.

† Elem. Med. CXXVIII. et post hunc manu scribe, "Sed et iidem affectus e nimio ad extremum idoneae materiae cibo (CXXIV.), reliquorum omnium, sic supra modum stimulantium more; ut et inedia, nascuntur."

water? Were the poorer kind of students of divinity restrained, by the sublime precepts that the subject of their studies inculcates, or by want of the means that produce high spirits and inordinate effort, from following the same practice? If any number of persons, addicted to rioting, were kept upon bread and water for ten days or upwards, Would that propensity still remain? The operation in this case is a debilitating one; so is that which is said to arouse the high efforts of the vis medicatrix; so our author says is that which produces his spasm: But, where, in the former, are the proofs of high effort, of increased motion or vigour, call it what you will? There are, as will readily be perceived, none: But, according to the fundamental proposition of the new doctrine, the debility of all the functions goes on increasing in proportion to the degree of debilitating operation applied: Neither are there any in the latter, since, what has been mistaken for increased action, or motion, or, according to his strange language,

reaction, is proved to be in reality, diminished vigour; all the remote causes being debilitating, and all the remedies, proper either in kind or proportion, stimulant*, while the only marks of judgment commonly employed, those taken from the appearance of the symptoms, are demonstrably false†: So far, therefore, as the review of the debilitating powers under our present consideration goes, debility, which has no tendency to produce vigour in the course of diseases, is equally devoid of that effect in the formation of their cause.

CLXXVII. LET us prosecute the same inquiry in the consideration of morbid state, as it arises from cold: Cold is not stimulant, according to one, nor tonic according to another, nor astringent, according to a third supposition; but, on the contrary, always and directly debilitating‡. If,

* Outlines, lxxxv. Elem. Med. DCLIV. DCLV.

† Outlines xli. xliii. to xlvi.

‡ Elem. Med. CXVII.

after it has been evidently applied, a state of vigour ever arises, such a state is not the consequence of the cold, but of the application of stimulant powers preventing its debilitating effect; or it is the effect of cold, moderating by its debilitating operation, the excessive stimulus of heat and of other stimulant powers*. Widely different from this is our author's account of cold, in the following assertions: "The operation," says he, "of cold on a living body, is so different, in different circumstances, as to be of difficult explanation; and this, therefore, is attempted with some diffidence." The reader will not wonder at his diffidence, when he proceeds to say, that "cold, in certain circumstances, has manifestly a sedative power†: It can extinguish the vital principle entirely, either in particular

* The full account of the operation of cold is given in the *Elementa Medicinae*, from the CXVII to the CXXIV paragraph.

† The sedative effects of cold are clearly refuted in the paragraphs referred to, and in paragraph XXI.

parts, or in the whole body; and considering how much the vital principle of animals depends upon heat, it cannot be doubted, that the power of cold is always more or less directly sedative." This, then, is one operation that he assigns to cold in his usual way of mere assertion, without either proof or reasoning: "But," continues he, "it is equally manifest, that, in certain circumstances, cold proves a stimulus to the living body, and particularly to the sanguiferous system*." Not content with assigning to the same power two diametrically opposite effects; with the same breath, he gives it as many more: His words are, "And, besides the sedative and stimulant power of cold, it is manifestly also a powerful astringent, causing a contraction of the vessels on the surface of the body, and thereby producing paleness and a suppression of perspiration. It is likewise probable, that this constriction is communicated to the whole body, and

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* First Lines, LXXIX.

that thereby the application of cold proves a tonic power with respect to the whole system*.”

CLXXVIII. THIS is a fair specimen of our author's reasoning upon most occasions. Cold is the same, and a given, power, and, with respect to living systems, should possess the same, and a given operation: But here, to one and the same power, four different, and some of them diametrically opposite, operations are assigned. We have already asserted, that it is always a debilitating power; and, whatever dispute there might be about the possibility of sedative operation in some powers, such as contagions and poisons, with the mode of operation of which we have no acquaintance, in the operation of cold there is none. Upon dead and living matter equally, the action of temperature is always in exact proportion to its degree. Upon living systems, and therefore the human, that degree of its action, which we call moderate

* First Lines, LXXXIX.

heat, is absolutely necessary to the healthy state. Rising considerably above that, it produces diseases of too much vigour, to which we give the name of *sthenic*; as we do that of *asthenic* to those of debility. In these it is, that a still higher, or an ultimate, excess of heat has the indirect effect of producing the cause debility, as in the torrid zone, and other hot countries: Again, falling below the health-giving point, at which part of the scale, mankind, from their feelings, have agreed to give it the name of cold, temperature produces the same diseases by a degree of debility exactly proportioned to its degree. In this degree of its operation, however, it still stimulates, only in a degree not sufficient to health and agreeable feeling. Somewhere betwixt sixty-two and sixty-four of Fahrenheit's thermometer, there is a point of temperature, which is agreeable to our feelings, and exactly adapted to our healthy state. Every lower degree of its stimulus falls short of that effect, till death becomes the consequence of an ultimate

diminution. When that happens, and the action of temperature is too low to support human life; that it is not however sedative, but, on the contrary, still stimulant, is proved by the animals of cold blood being, in the same degree, still able to support, not only their living, but even their healthy state; which the temperature can only do by its stimulus as heat. While, therefore, this is the true state of the fact, in direct contradiction to that asserted by our author; at the same time, in no part of the range of scale, (from the health-giving agreeable point of temperature, down to that at which animal life is no longer supported for want of stimulus, and not destroyed by the positive operation of a sedative,) is ever action increased in consequence of its diminution. If the redning of the face under exercise in cold weather, the bracing of the scrotum by cold washing after its relaxation by heat, and the relief of fevers in the torrid zone and in other similar situations, should be adduced, as so many instances of stimulant

effect, arising under the operation of cold: The answer to the first of these appearances is, that it is owing to the impulse communicated to the blood vessels by exercise*, to which, from the nature of their constitution, men have a propensity, in order to get rid of the disagreeable feeling of cold†: But, without that, or some other stimulus, cold would proceed to death, without producing an invigorating effect; and its application either to a part, or the whole body, in an overheated state, is a reduction of the excessive temperature, that induces relaxation and debility, to its stimulant range. For example, if the external temperature, instead of remaining at the middle healthy point, should mount up ten degrees higher; and, at the same time, a degree of cold, as much below the same middle point, conveyed in a dense medium, should be applied, the only result would be a subduction of ten degrees of heat, not an addition of ten degrees of that temperature, which is call-

* This is explained in M. S. after CXXXVII.

† See the refutation of Sthaalianism.

ed cold. This is the true state of a fact, the mistake of which has produced the most pernicious applications to practice. In the cure of the fevers of the torrid zone, there is no access to real cold; the best that can be done there, is to diminish the faulty excess of heat. The contrary explanation, however, has proved the death of thousands; nothing having been more common of late, than in the severest winter weather of this country, to open windows, put out fires, and leave no more covering, than a single sheet, upon a patient expiring under debility. While temperature, therefore, acts as cold, that is, in all its degrees under the middle point betwixt the extremes of heat and cold, it is never followed by stimulant effect; its only effect is debility, constantly arising in a degree proportioned to that in which the cold is applied. Its operation, therefore, in diseases of debility, as in the confluent small pox*, the gout†, chronic rheumatism‡, and fe-

* Elem. Med. DCLXIX.

† Elem. Med. DXCV. DCXIII.

‡ Elem. Med. DLXXXIII.

vers, is hurtful in the same proportion, in which it is serviceable in diseases of excessive vigour; such as the distinct small pox*, acute rheumatism†, inflammatory pyrexiae‡, and catarrh or the common cold§. The truth of all this can be ascertained by a very short and simple experiment. Let any person, who denies it, sit down in the present hard frost, upon a cold stone, in the open air, stark naked, and wait till the vis medicatrix strikes up a heat on him ||. From what has been said on the operation of cold, it follows, with all the clearness of demonstration, that it is naturally and constantly debilitating; that stimulant effect takes place in no part of it; and that no inference in favour of a vis medicatrix can be drawn from a just estimation of the action of cold,

* Elem. Med. CCCLXXIV.

† Elem. Med. CCCLXXXVII.

‡ Elem. Med. CCCXLVII.

§ Elem. Med. CCCCVII.

|| Before that happened, it is likely that death would convey the surviving part of him to a place where his situation might, perhaps, be hot enough.

as a hurtful power to living systems. Its supposed tonic power is upon the same footing as the stimulant; it being never cold, but some stimulus, such as that of heat, succeeding to it, or alternating with it, and prevailing over its debilitating energy, that produces any thing like that state of vigour called tone. Its astringent operation is only true with respect to dead matter, which it constricts, over all nature, in proportion to its degree, but is altogether a false application of an action of cold to living matter. The paleness and shrinking of the surface, which are the only marks that ever could be taken of the astringency of cold, are perfectly explicable by its debilitating power, impairing the action of the vessels in their extremities, without having recourse to an operation on dead matter in explanation of one exerted on that sort of matter in nature, which is totally under the influence of excitement*.

* Elem. Med. LXII. M. S. Outlines, lii. to lviii.

CLXXIX. As we have found certain proof of no stimulant operation arising under a debilitating one, in the hurtful powers that we have already considered; so neither shall we find any in those that we have next to speak of. Accordingly, though loss of blood and of other fluids*, want of corporeal†, or mental, exercise‡, a low state of passion§, which are all directly debilitating powers; and the same powers in ultimate excess, as well as his “intemperance in drinking, and excess in venery||,” which are debilitating indirectly*; though all these, both beget predisposition to diseases of debility, and give birth to them; yet, in no part of the progress of that operation, can any stimulant opera-

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* Elem. Med. CXXXIV.

† Elem. Med. CXXXVII. M. S. 138. “Nimia exercitatio vel salutari gradu minor, debilitat; illa, nimio stimulo incitabilitatem consumendo; haec, necessarium corpori surripiendo, &c.”

‡ Elem. Med. CXXXIX.

§ Elem. Med. CXLII.

|| First Lines, XCII.

* Loc. relat.

tion be discerned. Among the worst fevers are those, that originate from grief, fear, and despondency; of which the two last are justly held, by every judicious practitioner, as symptoms of evil import; which is the reverse of "their exciting such motions, as are suited to obviate" their own "hurtful effect*." It is certain then, that "the vis medicatrix naturae," whether "famous" or infamous, "in the schools of physic," produces none "of the motions excited in fever; that not one of them "are" the effects of "such a power."

CLXXX. AFTER the proof of the vis medicatrix naturae of others, which is a vis destructrix† in the hands of our author, being equally a non-entity in all the senses in which it has been received; it might be expected, that, since, of itself, it merited not the attention we have bestowed on it, we might therefore now dismiss the subject: We are, however,

* First Lines, XXXVII.

† First Lines, XXXVIII.

obliged to give it a further prosecution, because the author's scattered and dissultory manner of reasoning is not to be answered, by tearing up any one fundamental part, but by varying the attack, as he varies his modes of argumentation or rather asseveration, and because some might otherwise deem our refutation incomplete. To prosecute, then, this most irksome labour, of exploring a field for criticism without bounds, and which denies to the inquirer the gratification of bestowing upon any part of it a single expression of approbation: In the very next paragraph*, his assertion of the *vis medicatrix*, as being the cause of the cold stage, (for by the words "some part," he means *the whole*), and his reasons for the assertion, are inimitable.

CLXXXI. His first reason is "because the cold stage appears to be universally a means of producing the hot." This again is intended for a bold assertion, and not of a

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* First Lines, XXXVIII.

partial, but universal application. It is impossible to conceive his reason for it; unless it be, which is not unusual with him, that, because the cold stage in intermittents precedes the hot, therefore the former must be the cause of the latter (CXLIV.). Here we must repeat, what was formerly said in contradiction to his assertion of the universality of a cold stage in fevers, that, excepting those of the intermittent and remittent kind, the precedence of a cold stage takes place in no fevers whatever (CXLV.); and therefore, that every conclusion from that fact must fall to the ground, with respect to all other fevers; consequently, to that extent, he cannot be allowed his favourite proximate cause of fevers. But, even with respect to those in which a cold stage is evident, the cold stage is not the cause of the hot, more than any part of an effect, depending upon a common cause, is the cause of any other. It is a point already proved (CXLVI.), that whatever is the cause of either, must be the cause also of the other: And, to cut short every

occasion for superfluous criticism, we again repeat, what has been said so often, that the cause of every stage of an ague is the same, to wit, debility;* which is proved by every power concerned in their production, being debilitating†, and every remedy efficacious in removing them, being stimulant and invigorating‡. This puts an end to the dispute, since it is proved to a demonstration, that the diversity of symptoms in the cold and hot stages, are only a diversity in appearance, and not in reality §; and symptoms never furnish any criterion to be depended upon in any judgment of the nature of disease.

CLXXXII. LET us proceed to examine his next reason for asserting, “That some part of the cold stage may be imputed” to his trusty friend, “the same” dame, vis medicatrix: It is “because cold externally applied, has very often similar ef-

* Observat. on spasm, CLXXV. p. 75.

† Elem. Med. DCLII. to DCLIX. DCLXI.

‡ Elem. Med. DCLX. to DCLXIV.

§ Elem. Med., DCLV. Outlines, XLIII. to XLVIII.

fects:" As, in any true doctrine, there is a strong chain of clear facts, all closely connected together, and depending upon a fact in common to them all; so, in that sort of reasoning, that sets out from a confused perplexed hypothesis, there is nothing but an incoherent rope of discordant materials, without mutual relation, and fixure in a connecting basis. The sound reasoner, like a masterly musician, adjusts, with perfect exactness, every part of his detail; the fabricator of system, can no more give uniformity to his whole, than a person, devoid of ear, and uninstructed by rules, can go over again the notes of an air, that he had once randomly put together. The former faithfully follows the phenomena of nature, as they present themselves in order to his cautious observation; the latter borrows rashly and indiscriminately from every source, little regardful of their certainty in fact, or use in application. The reader is left to apply this remark, as his good judgment may direct, while we proceed in our train

of observations, as evenly as the windings and turnings of the subject will permit: That cold externally applied, produces heat, is a repetition of the absurd, though very generally entertained, notion of the interference of the vis medicatrix in the supposed sedative operation of cold. It is twenty-four years since our author reprobated Professor Muishenbroek's doctrine of *Frigorific Particles*, after the example of many others: Who had then taken up the juster notion of, what is called cold, being only a privation or diminution of heat, and a negative, not a positive, power. Though, therefore, he was equally, with more judicious observers, ignorant of the true effects of cold upon the human and other living systems; still it might have been expected, that, having learned the falsity of a doctrine, that made cold a positive power, he would have also seen, that the notion of its sedative operation was an application, in physic, of that erroneous piece of reasoning. This was the last relic, that we recollect of the corpuscularian doctrine; the

universal reprobation of which was not reserved for the new medical doctrine; but was the merit of the chemical and mechanical observers of nature, during the latter part of what is passed of this century. Whose example, in adding useful detached facts to the little stock formerly acquired, and thereby gradually contributing towards a collection, that might at last admit of the attempt to arrange them into a general form of knowledge, had our author been contented to follow; instead of his ill-fated visionary scheme of imposing an indigested farrago of the dreams, fictions, and reveries of the sixteenth, seventeenth, and all preceding centuries, upon the sense and discernment of the present; he would have proved a more useful member of society, had more credit for his labours, and, better provided for his own internal satisfaction. Upon the occasion of the present assertion of “cold very often producing heat” in the progress of its operation: However ignorant he was of its true operation, and whatever, and how

many foever, modes of operation he, with others, was pleased to assign it; it was the last degree of imbecillity of recollection, to forget, that, what he had allowed to be a negative quality, could never be a positive hurtful power, that is, a sedative of destructive tendency. And, besides, the proof already adduced, of cold being always a debilitating power; we have only to add here, to what was said before, that the instance which he brings of cold water, when the body is well covered up in bed, occasioning sweat, is likewise a mistaken one. Nay, there is a triple mistake here. And first, in the usual way, that power to which the effect is chiefly owing, is altogether overlooked, while to that, which contributed little or nothing towards it, the whole is attributed. No body will pretend to say, that a draught of cold water in a cold situation, will occasion sweat. Or, if any doubt can remain with any person, we beg leave to recommend him to

the situation on the cold stone*; where, let him sit, till he is impressed with the double conviction, that, in no part of the operation of cold, either heat or sweat arises, or can arise. Next, although it were admitted, that the living human system could be heated, in the progress of a refrigerant operation; that would be no proof, that the hot stage of an ague consists in an increased action, produced in the course of a preceding sedative, or even debilitating, one, and arising from an operation of nature independent of the ordinary powers, to which her motions are owing. It neither would, nor could be a proof of such a state; because there is positive proof of the contrary†. If it should be urged in this author's defence, that he was not obliged to foresee objections to his doctrine from a doctrine not known at the time when he composed it; and if that, therefore, will be readily

* Above, p. 83.

† In all that has been said in refutation of the vis medicatrix.

granted him; he certainly should not have also expected the exclusive privilege of laying down fundamental propositions, without being sure of their truth. He should have fenced them all around with such a bulwark of proof, as to defy assault from any quarter. But, instead of that necessary precaution, no more care has been taken to establish, upon a solid basis, every proposition connected with this pretended fundamental part of doctrine, than if that had been thought a matter of indifference. The Peruvian bark, and, before the discovery of it, wine, and other strong drinks, according to the practice of Riverius, and other physicians his contemporaries, and lately the still more diffusible stimuli, introduced by the new doctrine, have been given both in the cold, the hot, and the sweating stage, and always, not with advantage only, but, in the cases where the diffusible stimuli had been used, with astonishing success: While, on the contrary, bleeding, purging, and other debilitating means were never employed, but with

hurtful effect; with only the single exception of vernal agues, which, upon a false theory, were supposed to admit of some bleeding, as partaking of a phlogistic nature. All that is a double proof of the sameness of the nature of the disease in both these periods, and completely subversive of our author's supposition of the cold and hot stages being of a diametrically opposite nature to each other; identity of effect being always a sure warrant for the conclusion for identity of cause, though the latter be otherwise often unknown. If the hot stage were a state of increased action; the stimulant remedies, which we have just now mentioned as being so salutary, would be equally hurtful in it, as they are known to be in other diseases, where there is no doubt of the reality of increased action; for instance, in the several phlegmasiæ*, synocha†, and catarrh. The contrary,

* Diseases of increased excitement or vigour with inflammation of a part.

† The same sort of disease, without the inflammation of a part.

however, being the indisputed fact, gives a complete overthrow to the supposition of the hot stage in agues, consisting of increased action, whether as occasioned by the interposition of a vis medicatrix, during the operation of the cold stage, or by any other means.

CLXXXIII. His last argument for “some part of the cold stage” being “imputable to the “vis medicatrix, or to his “general law of the animal economy, whereby it happens, that powers, which have a tendency to hurt and destroy the system, often excite such motions as are suited to obviate the effects of the noxious power*, is, that “it seems to be in proportion to the degree of tremor in the cold stage, that the hot stage proceeds more or less quickly to a termination of the paroxysm, and to a more complete solution, and longer intermission†.” Our common puzzle is to find a reason for our author’s assertions; but in

* First Lines, XXXVII.

† First Lines, XXXVIII.

this we are completely nonplused to find a meaning. Here a fact is asserted, that the quickness of the termination of the paroxysm, the completeness of its solution, and the length of the intermission, before the arrival of another paroxysm, is in proportion to the degree of tremor in the cold stage." That may be, and, we believe, sometimes is, true: But, what has it to do with the present question? Does it prove the existence of a power, the existence of which has been disproved; or solve the important question? Whether it was nature, or Hippocrates, that created this demon; this *αὐτοκαταρία*, as he named her; this vis medicatrix, of his followers; this reaction, as we shall find it denominated by and by; this faculty in the constitution of redressing its own grievances; this archæus of Van Helmont; this wisdom of the soul of Dr. Sthaal; this arbitrary tyrannical imp; which, for once that it is only said to have pointed at doing good, is proved, to have a thousand times, done real mischief, in consequence of the uni-

verfal erroneous practice, into which physicians have been betrayed by their implicit faith in it.

CLXXIV. THE motions of fevers of the intermittent kind proceed not with that regularity, which our author, to answer the purposes of his theory, assigns them. Though there are three distinct forms of them, known by the appellations of tertian, quartan, and quotidian; yet, betwixt the most regular and purely intermitting movements of these, and that febrile state, in which all tendency to intermission, and even remission, is obliterated, an endless variety intervenes, which authors have in vain attempted to reduce to any order. Their distinctions of them into quintans, sextans, septans, and so forth, on the one hand; and, on the other, into half, double, doubled, triple, tripled, tertians, quartans, and quotidians; sometimes again of the intermittent, sometimes of the remittent kind; and, added to these, with much variation in the degree of either intermission or

remission, are all without sense in the design, or use in the application. If we have proved, that symptoms, considered in themselves, without a proper knowledge of the powers, that either produce, or remove them, lead to no judgment of their proper nature, or of their common cause*; what credit is due to an author, who, totally divested of that knowledge, rests the proof of a fundamental proposition upon a presumption of it? We know not why the cold fit of intermittents is distinguished by a concurrence of symptoms, different from that which ushers in continued fevers, (for, in spite of our author's strained reasoning to the contrary, different they are), and equally different from the concourses that happen in the gout, in epilepsy, in apoplexy, and in the commencement of palsy; while all these concourses equally differ from each other†: But, we know, that powers the same in kind, differing only in degree, and often not even in that, produce them, and

* Outlines, XLIII.

† Elem. Med. DCLIX.

that powers of an opposite effect, the same also in kind, and adapted in degree to the degree of morbid state, remove them. No further our knowledge goes, and so far, it is solid, useful, knowledge: From which, with respect to the symptom of tremor, which so eminently distinguishes the commencement of the intermittent paroxysms, the only conclusion, that we are enabled to draw, is, that if we see in fact a high degree of that symptom followed by a better kind of the disease, than a lower degree of it, the cause is more mild in the former, than in the latter, and will be removed by a proportionally smaller energy of the means of cure. But it by no means leads to the idea, that debility serves no other purpose, than the contradictory one of counteracting its own tendency, and of exciting a state of the system, diametrically opposite to that in which itself consists. Bad as such a conclusion is, and worse it could not be, it is nearly as good as any that could be expected from his knowledge of the truth. In consequence

of which, like a person viewing an object through a thick mist, or in a vanishing twilight, he could obscurely see something like what Dr. Hoffman had called *atony*, which he might call *debility*. And, as it is an adage of that author, that atony begets spasms, revolving in his mind, what he might make of this phenomenon, it occurred to him, perhaps naturally, in this state of reverie, and having such an example before his eyes, to make a spasm out of it, that is, to place the spasm of his original author upon the basis of this atony or debility.

CLXXXV. HERE if some should regret, that, like a tennis-ball flung against a wall, and as instantly rebounding from it, he should have stumbled so near the truth, and yet, in his very next turn of thought, taken a direction that was to mislead him from it for ever; the occasion for that regret will cease, when it is considered, that, in no part of his works, is there any appearance of his having, to use his own ex-

pression, made any sort of approach* to an adequate notion of debility. A sufficient proof of which we, once for all, produce in his debilitating evacuant plan of cure; which we have shewn is precisely the same with those of all preceding medical systems, the complete unacquaintance of which with the true nature of debility, and with the vast proportion, to any other hurtful powers, that it bears in the production of diseases†, stands incontroverted‡.

CLXXXVI. THOUGH we have completely overturned the several arguments upon which, as so many feeble props, the cementless, crazy, mouldering fabric of our author's proximate cause of fever rested; and shewn, that whatever he has advanced, whether in the form of argument, or assertion, are mere conceptions of a be-

X X 2

* Observat. on spasm, p. 8. 22.

† See note, p. 55.

‡ See above a short account of the old method of cure, Outlines, p. lxi. &c.

wildered imagination, without any foundation in nature and truth, and even devoid of all connection, all relation, as parts of a whole, among themselves: We come, in the next paragraph*, to the review of spasm, now, for the first time, announced; and, like a spurious brat, which had hitherto been kept out of sight, produced into company, and recognised as legitimate. In the recognition of which,

CLXXXVII. "It is to be particularly observed," continues he, "That, in the time of the cold stage of fever, there seems to be a spasm induced every where on the extremities of the arteries, particularly of those upon the surface of the body." An impudent affectation of modesty runs through the whole style of this writer. He says here, "there seems to be a spasm." In the next paragraph, he says, "there is little doubt, that a spasm does take place, &c." In the next, his words are,

* First Lines, XXXIX,

“ we are led to believe, that, together with the spasm, there is an atony, &c.” In the XLIII, “ some illustration and proof of this,” he “ expects, will arise, &c.” In the XLIV. “ It may seem difficult to explain, how an atony and spasm can subsist, at the same time, in the same vessels; but whatever difficulty there may be in accounting for this, we consider it as a matter of fact, &c.” In the paragraph immediately following*, “ this atony,” he “ supposes to depend upon a diminution of the energy of the brain, &c.” In the XLVI, as if he had collected confidence from the success of his preceding reasoning upon the subject, he sums up his doctrine of fevers, as he calls it, in the words that there follow; which begin thus: “ Upon the whole, the doctrine of fever is explicitly this.” He had talked mincingly of the particulars, but he is so pleased with the sum total, as to declare himself “ explicitly” on it.

* First Lines, XLV.

CLXXXVIII. IF an entertainment can be made out without the assistance of a bad kind of music, and a leisure hour passed better any way, than in hearing and reading a miserable piece of poetry, and if, in all cases, the exact value of both these arts is stamped by their effect; what better rule of judgment can we lay down for estimating works of science, than that of judging likewise from their effect? The application to the present case is evident. Physic, taken in its most ample extent, as being that department of knowledge, which grasps, at its peculiar subject, the whole doctrine of life, in so far as this is attached to any sort of matter in the universe, is, therefore, of all others, of the highest importance; because, of the greatest extent and utility. Consequently, as the merit of every cultivator of so great a branch, is in proportion to the number and value of useful facts, which he contributes towards its improvement; so, the contrary practice must, with equal clearness, be the standard of demerit. If the noblest part of the living creation is

the animated, and of the animated the noblest part, in his own opinion, is man; how valuable is the knowledge, which, upon sure and distinct principle, can prevent the dissolution of such a living system? and how pernicious that pretension to knowledge, that, for want of acquaintance with the nature of life, in every attempt to prevent its dissolution, produces it? When, therefore, the importance of this science, in its applications as an art, is compared with the execution of those arts we just now spoke of, it will be evident, that their comparative failure in performance is not to be tried in the same scale of animadversion. Bad poets and painters are only ridiculous characters; bad physicians, detestable: The former fail in pleasing or improving the taste; the latter deprive us of happiness: The deficiency of the former is foible; that of the latter, crime: We laugh at the demerit of the one; the contrariety of effect that the other produces, is too serious, and too intelligible to the common feelings of humanity, to need explanation.

In the imperfect and varying state of propriety of thinking in human life, ridiculous characters must appear; perhaps they add to the sum total of a beautiful variety, while, for certain, the more perfect characters are set off to advantage by the contrast: But, that blundering affectation of high knowledge, that depopulates the human race more than all the plagues and curses of life put together, cannot be mentioned with indifference, cannot be detected without the acutest feelings of an honest indignation.

CLXXXIX. WHILE nothing of this is intended for personal application; we have only, in returning to particulars, to ask our author, if he was serious in these expressions of modesty and diffidence, the recurrence of which almost in every paragraph, could not fail to disgust and cloy every reader, the weight of the task, he had imposed on himself too heavy for his shoulders, where was the necessity of his engaging in it? There was no great won-

der in his discerning great mistakes, defects, and imperfections in every medical system that had preceded his own: But, unless he was conscious of powers in himself adequate to the attempt of producing something really beneficial to mankind, could he not have let it alone? If all the medical systems, that had appeared in the world, were such as they are now found to be, in perfect repugnance to the great end of them, the preservation of life and health; where was the use of selecting from them their very worst parts, and rendering these, by the new touch given them, still worse than they had been in their original form? And, what sort of modesty was it, to expect, that a mass of such materials, so put together, would, at this advanced period of the eighteenth century, pass for a new and correct system of medicine? For, such as it is, we scarce know a single fragment of it that can be called the author's own. Let the spasmodic part of the doctrine be

restored to Hoffman*; the pathological, to Gaubius†; the physiological and anatomical, to Baron Haller‡; the best part of the chemical, to Dr. Black, the rest to preceding chemists§; the astonishing theory of making a man, to several writers of the two last centuries, quoted by Haller||; the system of aether, to the corrupters of the venerable doctrine of Sir Isaac Newton; the nosological labour, to Sauvages and his followers in that department; the botanical part, to Linnaeus; and we shall find the works of this author reduced to a commodious seize; his originality to nothing, and his invention humbly moving in the narrow circle of cobbling the false systems of others, for want of ability to make even a bad one of his own.

* Introd. p. xxxi. xxxii.

† Observat. on spasm, CXLI.

‡ See above, Observat. on spasm, note, CXLI. Compare that little book with its original, in Haller.

§ This will be explained after.

|| Institut. of Med. note just now mentioned.

CXC. To return from this definitive judgment of the merit of the work before us, which seems already warranted by the overturn given to its foundation; as if conscious of the flimsiness of his reasoning in the paragraphs, which we have taken notice of, he seems to drop the thought of connecting the origin of his spasm with it, and proceeds to the separate proofs of its existence, in the following words: "This appears from the suppression of all excretions, and from the shrinking of the external parts; and although this may, perhaps, be imputed, in part, to the weaker action of the heart, in propelling the blood into the extreme vessels; yet, as these symptoms often continue after the action of the heart is restored, there is reason to believe, that a spasmodic constriction has taken place, that it subsists for some time, and supports the hot stage; for this stage ceases with the flowing of the sweat, and the return of other excretions, which are marks of the relaxation of vessels before constricted."

CXCI. THAT a proper idea of this lately invented spasm may be formed; besides its seat, which we are told is “every where the extremities of the arteries, particularly those upon the surface of the body,” it will be proper to point out the diseases of which it is said to be the cause. These are the fevers of the intermittent and remittent kind, whether tertian, quartan, quotidian, or anomalous*, and synocha, synochus, and typhus, his first six genera; and all his phlegmasiae, or second order of his first class; as well as all his exanthemata, or third order of the same class; and likewise his two remaining orders, hemorrhages and fluxes. All these, though far from being diseases of the same nature, but many of them diametrically opposite to each other in every requisite essential to morbid distinction, he has brought together under one common head, supposing them so far the same, as to agree all in one general character: Which is, that, “after

* See above, p. 25. 26. 27. notes * * † *, and Genera Morborum Cullenii.

beginning with some degree of cold shivering, they shew some increase of heat, an increased frequency of pulse, and some diminution of strength in the animal functions." They are further separated from others, and united together into one class, named the class of pyrexiae; which again is subdivided into five orders, denominated fevers, inflammations, eruptions, hæmorrhages, and fluxes*. This is an arrangement formed, as he would wish us to believe, upon the solid ground of matter of fact. Their further agreement in spasm, as their common cause, though the most wild of all theories, and demonstrably false in every part of it, he would also, as we have already seen, wish us to take from him as a fact upon his bare word †.

CXCII. WE had overthrown his hypothesis of spasm upon the ground on which

* First Lines, VI. VII. Synopsis Nosologiae Methodicae, edit. anno 1772.

† Above, par. CLI.

he first defended it*; but since we now find him on another ground, and pretending to bring proof of the truth of his spasm as the cause of fevers, we must also meet him there. But, before meddling with his proofs, and allowing him for a little the full and last enjoyment of the conclusion from them, it may not be improper, first to attempt a breach in his outworks, to gain thereby a post, from the superior advantage of which we may be enabled more effectually to drive him from every interior hold. In the first place, then, if we shall find among the diseases, supposed by him to agree in the circumstances which have been mentioned, two sets diametrically opposite to each other in all the essential distinctions of morbid state, that is, arising from the most opposite powers, depending upon the most opposite causes, and removed by the most opposite means; we expect credit from every reader for the conclusion, that spasm cannot be the cause of both, and upon this

* Above, CLII. CLIII. CLIV. to CLXIV.

sure principle, that different, much less diametrically opposite, effects, cannot arise from the same cause. Since he has given, at least a nominal connection with debility to his spasm, passing over, therefore, the diseases of real debility, we shall first prosecute our inquiry in the other set of diseases, the true cause of which is the reverse of debility, and upon the proof of that rest our rejection of spasm as their cause. These are the sthenic diseases pointed out in a former part of this work *, and explained in other parts †. Here we shall present the reader with a refutation of spasm, as the cause of sthenic diseases, translated from the same work, to which we have so often had recourse, the first edition of the *Elementa*, that work being, as we have said, out of print ‡.

CXCIII. "SPASM cannot be the cause of sthenic diseases, because neither the hurt-

* Outlines, CXXX.

† Outlines, X. XI. XLVI. LII. LIV. to LX. LXXV. LXXVI. to LXXVII.

‡ Elem. Med. prim. edit. CIX.

ful powers producing them, nor the remedies removing them, have any tendency, the former to produce, or the latter, to remove, a spasm. How should stimulants, which, in consequence of increasing excitement, first increase all the functions, then produce a disturbance of some of them, and a diminution of others*, while they go on to increase the rest, withdraw their effect from all the rest of the system, and turn their whole energy on the extreme vessels of the surface; and," from the effect they produce there, "excite" only "a symptomatic affection over the rest of the system? How should bleeding, the various other evacuations, and abstinence, which diminish excitement over the whole body, by diminishing the distention of the vessels, and, therefore," proportionally removing a "stimulus applied to them all? how should avoiding exercise, which retards the velocity of the blood's motion? how should" a similar "rest from mental labour, and

* Outlines, LIX.

keeping the mind calm and serene; which imply, that a violent stimulus, operating upon the brain itself, is thereby guarded against?" How should all these "neglect their well known office of acting upon the whole system, and, as it were, in a transport of fury, direct the whole force of their action upon the extreme vessels of the surface? Show but one exciting power, that produces a spasm, one remedy that removes it; and it shall be granted, that all the rest have a similar operation, and spasm, without saying a word to the contrary, shall be sustained as the cause of sthenic diathesis.

CXCIV. BUT, what has become of predisposition? whether has it run from us? what explanation must we now give of it, if spasm is to be admitted as the cause of the disease? By excess in eating and drinking alone, and want of proper exercise, a person may be carried from the very nice line of perfect health, through all the intermediate degrees of predisposition, to the

highest degree of a peripneumony. When that has happened, what difference is there in the state of the body on the day on which the disease happened, and the day before? Were the vessels, which are full on the day of the disease, empty the former day? Does the pulse, from being weak, small, and soft, all of a sudden, become strong, great, and hard, immediately upon the arrival of the disease? Are there, no strength, no vigour of mind, no force of passion, to be discerned before the disease comes on, greater than happen in the contrary predisposition, or even in perfect health? Does a person under a predisposition to dropsy, or, already "overtaken with that disease, in an instant of time, fall into" so very opposite a disease as "pleurisy? Is the operation of the exciting powers in vain applied to the body, during all the rest of the period of predisposition, and only exerted at the beginning of the disease? Are we to suppose, that the stimuli of excess in thinking, of habitual passionateness, of rich, seasoned, food, of strong drink, of

abundance of blood over the whole system, while the motion of the latter is further quickened by exercise, all applied in so many forms, for a long continuance, and in a high degree, will not gradually have some effect; and, on the contrary, that they will at once, and all of a sudden, excite the disease, and only produce that effect, by inducing at last a spasm upon the extreme vessels, and not even at this time affect the rest of the body? Shall predisposition, which, though not sufficiently understood, is, upon all other occasions, an acknowledged state, not be granted to precede this disease? It cannot. Predisposition to this, and every other sthenic disease, will be granted: And, if so, it will not" of course "be denied, that it is a kin to the disease, the difference betwixt them turning upon a very slender circumstance of distinction. All the phenomena, which distinguish the commencement of disease, except a slight disturbance of certain functions, also depending upon the same cause, as the state of the other functions" not

disturbed, and to be removed by the same means, also distinguish the last part of predisposition. And, therefore, if spasm belongs to the former, it must to the latter: But its presence is not insisted upon in the predisposition, its absence is allowed; consequently, neither is its existence in the morbid state to be allowed: Since, therefore, the same exciting powers, which produce disease, also produce predisposition; and since they have been proved to produce both by the same mode of operation*; the conclusion, therefore, to be drawn from that fact, is, that the same effect flows from their common operation, in both predisposition and disease, and not different ones in either, according to the common notion, unsupported by any shadow of

* The complete proof of this is given in both editions of the *Elementa*, and, to unprejudiced readers, is, of itself, sufficient; but medical readers must have the refutation prosecuted through all their usual modes of reasoning, before their conviction is procured; and even then, it is only from the most judicious, that that is to be counted upon. See *Outlines*, LXV. LXVI. LXXXV.

reason. Hence, it is evident, that spasm, which occurs not in predisposition, cannot either have a place in disease."

CXCV. FURTHER, as spasm necessarily depends upon debility, that is another reason why it cannot take place in sthenic diseases; for debility cannot take place in diseases, depending upon a cause" producing "excessive vigour: Which is a fact demonstrated by this universal argument, that stimulants" only "produce the diseases, and debilitating means remove them, and with certain power" and efficacy*. "And though certain symptoms, such as shivering with feeling of cold, languor, and a feeling of weariness, because these indicate a diminution of functions, are therefore said, to make for debility as the cause; there is not, however, any debility in the system to act as the cause of these symptoms; as is plain from this single fact, that the same excessively exciting, or

* loca relata, and LXXXVI.

stimulant, hurtful powers, which produce all the rest of the symptoms, also produce those, and the same remedies remove” both. “If bleeding,” for example, allays the excessive action of the vessels, and removes the other symptoms of the disease*; do not those of shivering, languor, and feeling of lassitude, disappear with the rest? And, if they are removed by a debilitating energy, must we suppose they are also produced by it? Who would pretend to say so†?

CXCVI. SPASM cannot be blended with the cause of sthenic diseases, for this further reason; because, besides there being no debility” in this set of diseases (LIX.), distention, or something resembling it” in effect, “which, together with laxity and atony of the fibres, it shall be afterwards shown, is necessary to every true spasm, such as that, which, in diseases of debility,

* which it does,

† See Observat. on spasm, p. 24. note †

often occupies the internal fibres of the system*, in this case has absolutely no place in the fibres of the extreme vessels. The blood indeed is abundant, and, therefore, distends" its respective vessels, "in the sthenic diseases, but not to the degree of producing a spasm in any" part of "them. And how great is the difference betwixt these" slight "distentions and that" prodigious "one, which produces spasm in the stomach, in the intestines, in the bladder of urine, in the vessels of the kidneys, and biliary ducts? Nay, if they even were adequate to the production of a spasm, the effect of that should not be confined to the extremities of the vessels, but should extend to all the rest of the vascular system. But, as the latter is not true, neither is the former†.

* Outlines XLIX. Elem. Med. LVII. CXCIV. CXCVI. CXCVII. CXCVIII. CXCIX. CC. ad CCIV.

† Physicians never at any time could comprehend the human living system as a whole, acted upon over all by whatever powers were applied to any part of it, but constantly imputed its morbid state to certain affections of parts. The same is the idea that runs through all the winding jargon

Neither in this case can the something, that resembles distention in its effect (XLIX.), such as produces tetanic spasm, perform the part of distention; for that, whatever it is, regards the muscles, and is connected with the effect” arising from the influence “ of the will; to” the influence of which, the vessels, that are an organ of involuntary motion, cannot be subjected.

CXCVII. LASTLY, there is no room for a spasm in sthenic cases; because it is peculiar to those diseases, the whole phenomena of which depend upon debility, whereas all the phenomena of the sthenic, flow from a cause,” that produces “ too much vigour. There is not a surer proof of the presence of asthenic disease, of the absence of sthenic, than the pre-

about spasm. The hurtful powers are not supposed to operate upon the whole system, but upon the extreme vessels on the surface; and the remedies are not supposed to produce their effect, by altering the state of the whole system, but only by removing the spasm from the part affected. The complete refutation of this universal error, has been delivered in the section where the excitability is treated of. See Outlines XXXI.

sence of spasm or convulsion; which is an observation of the highest importance, in point of practical application, both in the diagnosis and cure. And from the same we may learn, how great a blunder it was, that not only united spasm with sthenic diathesis, but also made it its cause, assigning to it not its usual" and natural "seat, but an unheard of and incompatible one. Nothing is more consistent with itself than nature, nothing more regular, nothing more uniform, nothing more simple*."

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* The original of the last sentence, as well as what follows to the end of the paragraph, the translation of which it is thought proper to omit, is here subjoined, to gratify some readers, who may wish to see it. "*Nihil sibi constanter natura est, nihil ordinis, nihil formae servantius, nihil simplicius. Ubique aliquam sui partem ostendat, ei alias propiores, alias remotiores, alias contiguas, alias extremas, perinde ac in hominis corpore membra, suo quodque loco, disposita, pro certo habeas, et non quemlibet cuilibet artui temere haerere credas. Spasmus omnino in morbis sthenicis, magisque extrema vascula occupans, idem, ac alter pedum hominis, fronte eminens, est. Qui, contra, interiorum cavorum*

CXCVIII. THERE is still one argument in reserve to be added to those already produced," which is, "that spasm is entirely superfluous, in the consideration of the cause of sthenic diseases; it having been fully demonstrated, that sthenic diathesis is sufficient for their production*. Nay, what is taken for spasm in those diseases, is nothing else but sthenic diathesis, a little more prevalent upon the surface, than in the interior parts of the body, a full explanation of which shall be given by and by. The true state," so mistaken for a spasm, "is an increase of density of the fibres" of the vessels, "diminishing all their diameters,

aliquid, in morbis asthenicis, e debilitatis ubique signis, et laborantis loci distentione constantibus, adfectans, positum suo loco pedem, alteri respondentem, et notis artubus subiectum, refert."

* The references to the places where that demonstration is given in this edition, are the XXXIII. XXXVII. LXXXV. LXXXVI. In the second edition, consult the whole first chapter of the first part, from the CXI paragraph, where the powers producing either sthenic or asthenic diathesis, are fully explained.

and effacing those of the extreme vessels *. This state" instead of arising from any thing tending to produce a spasm, "is produced by nothing but the stimulant hurtful powers, that occasion all the other symptoms; and is removed by the debilitating powers, that remove the whole disease from every part of the body. And it is in support of the same conclusion, that the former are the only powers that produce predisposition, the latter the only ones that remove it, and cure the disease. What greater simplicity can the simplicity of nature require? To which" simplicity of nature, "what is more repugnant than spasm? So far is this part of our subject prosecuted in the first edition of the *Elementa*,

CXCIX. HAVING disproved the existence of spasm in sthenic diseases, or those diseases which depend on an excessive application of the ordinary supports of the

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* See Outlines L. Elem. Med. LX.

healthy state, from the powers producing and removing those diseases (CXCIII.), having no tendency, the former to produce, and the latter to remove, a spasm: From the acknowledgment of spasm having no share in the production of predisposition, though that has been proved to be precisely the same state with disease, only inferior in degree, and therefore arising from the action of all the same powers, in the same inferiority of degree (CXCIV.): From the assumption of debility, as necessary to the formation of spasm, which can have no real existence in diseases, that originate from a very opposite state (CXC.V.): From the want of a circumstance essential to the formation of every real spasm *, that is, distention, or something analogous to it, acting upon fibres in a state of atony and laxity (CXC.VI.): From spasm † being peculiar to diseases of debility, and incompatible with those of an opposite origin (CXC.VII.): Lastly, from its being a

* Above, CXLI.

† The same spasm as in last note.

superfluous state in sthenic diseases, for the production of which, the sthenic diathesis has been demonstrated, to be in every respect sufficient as a cause (CXCVIII.): The author of the *Elementa* proceeds next * to the refutation of the same spasm, as the cause of fevers (CXXXII.) † in the following words:

CC. “As” spasm “is therefore to be altogether rejected from sthenic diseases, it has also as little concern in the extreme vessels in fevers, by which we understand asthenic diseases. For, though these are not without the debility, which is required for this spasm, and which is essential to the true spasm that affects the internal parts, yet, distention,” a state “equally essential, is wanting. Now, if vessels in a state of repletion and distention, to the degree in which these are so affect-

* CXC. *Elem. Med. Edit. prim.*

† *Elem. Med. DCL. DCLXVI. to DCXC. Cull. Gen. Morb. Cl. I. Sect. I. G. I. II. III. V. VI. G. X. Sp. 2. G. XXV,*

ed in sthenic diseases, do not reach that degree of distention that is adequate to the production of spasm (CXCVI.), they are much less in their empty state, such as their present is, to be supposed to rise to that degree. To every spasm, with the exception of one, the exception of which weakens not our argument, distention is necessary. This distention in dyspepsia*, and in the gout, which is a peculiar dyspepsia †, is occasioned by foulness, and air let loose; in the colic, by the latter also, and hardened feces; in the renal and biliary vessels, by concretions ‡. But is there any thing, bearing the most distant resemblance to these, in the empty extreme vessels of persons in fever? The spasm, which is not excited by distention, is the tetanic §. And” even “ in it, that there is something similar to distention, is proved by the sameness of the effect. The confi-

* Called in English *indigestion*. † Elem. Med. DXCVI.

‡ commonly called *stones*. § or any spasm arising in any external part, as the lock-jaw, cramps, fitches, &c.

deration of which makes no more for this circumferential spasm, as some one calls it, than that of the other. Neither does its seat in the muscles, and its connection with the will, admit of any portion of reasoning, that applies to the other."

CCI. " WHILE that is the fact, it is worth while to attend to the arguments, used in defence of spasm. These resolve into paleness and diminution of bulk on the surface, the diminution of tumors, and the drying up of ulcers*.

CCII. THE cause of the paleness, shrinking, of the surface, and suppression of perspiration †, is not to seek for; as then happening, when the heart, from its share of the common debility, is unable to propel the blood to the extreme vessels. The same is the evident origin of the decrease of tumors, of the drying up of ulcers," of the suppression

* First Lines, XXXIX.

† All that is expressed by *cutis attenuatur*.

of any other evacuation, as well as that on the external surface. “Of these affections, do suppose spasm the cause, and then attend to the consequence. The blood, however slowly, would not cease to continue its motion to the extreme vessels; and if it were detained in the system by a spasm, the effect of that would be a congestion and accumulation of it in the” obstructed “part; so accumulated, it would distend the free vessels; it would press upon the neighbourhood of the vessels occupied by spasm; it would produce a repletion in all the surrounding parts; and, in time, its increased quantity would restore” the lost complexion, remove the paleness, distend the tumours, and, if the ulcers” and excretions “were at first prevented by the spasm from running, it would soon give them enlargement, and, at last, by the destruction of some vessels from the increase of acrimony, it would increase their discharge. We see then that the only arguments advanced in defence of spasm, a-

mount to a refutation of it, and to a demonstration of debility being its cause.

CCIII. IT is next to be observed, that in this case of asthenic disease, as well as in the former sthenic case*, neither the powers producing, nor those removing the disease, have any tendency, the former to produce, or the latter to remove, such a spasm, as Van Helmont, Hoffman, and Dr. Cullen, have supposed to arise in the extreme perspiratory terminations of the arterial system. In this case, all the powers that operate, as hurtful, produce debility over all, and, in the vascular system, that form of debility, which consists in the relaxation of the muscular fibres, considered as simple, and in an atony of them, considered as living, solids. By these two circumstances, these fibres, which encircle the vessels, have their constituent particles set at a greater distance from each other, and consequently the bore, the cavity, or dia-

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* Above, CXCIX.

meter of the vessels, which their dimension describes, is enlarged*. The plain fact, with respect to the state of the perspiratory vessels, is, that instead of a spasm, or contracted state of the vessels in question, their real state is preternatural enlargement, allowing, during the period of the morbid state, the grossest contents of the large vessels to escape. Attend to the reasoning on this part of the subject in the first edition of the *Elementa*. The supporter of the doctrine of spasm, whoever he is, shall be allowed his spasm, provided he will promise to keep fast hold of it, and prevent it from slipping through his fingers. In the beginning of a typhus fever, the skin is dry: Towards the end of it, clammy sweat, sometimes entire blood in all its constituent parts, flows out through all the pores. What has become of spasm now? Where is it gone? Can an affection, that should prevent the trans-

* Outlines, L. and LI. and the passages in the *Elementa* there referred to.

mission of the imperceptible perspiratory vapour, transmit the grossest fluid of the system? "What sort of a spasm, what sort of a contraction" of diameters, "is that, which produces an enlargement of diameter three times greater than that which takes place in the natural and healthy state of the vessels, independent of all spasm? The spasmodic theorist will not reply, that the spasm is now at last removed; for this" good and unanswerable "reason, that, as the effect, which is the fever, remains, nay increases, he knows that the cause, that is, the spasm, must remain and increase," in proportion*. Re-

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* The words in the original of the latter part of this paragraph are, "Verum dabitur tibi tuus hic spasmus, dummodo, servaturum te illum, et sponte manibus effugere prohibeturum, promittas. Initio typhi cutis sicca est. Sub finem fudor spissus, est ubi, sanguis integer omnibus, quibus constat, partibus, per omnia foramina diffuit. Quid spasmus nunc? Quorsum evasit? An, qui caeco vaporis perspirabili obstare debet, crassissimum humorem trajiciat? Qualis spasmus, qualis nimia contractio est, quae triplo câ, quae, omnis spasmi expers, naturalis et sana est, majorem diametrum pandat? Non solum nunc spasmus demum rejicies; quia, manente, immo

laxation and atony of the vessels, not only in their extremities, but through their whole tracts, is the debility of that part of the system: But the hurtful powers produce the same effect in every organ, in every function of the system. Accordingly, it is not in the vessels only, that are organs of involuntary motion, but in the muscles, that perform the function of voluntary motion; nor in both these only, but in the organs and functions of sense; and, besides all these, in the great organ of the intellectual function, and of that of passion and emotion, the brain, that the same debility prevails. It is debility or diminution of excitement, for want of the powers, the operation of which creates excitement over all the nervous system, and no affection fixed in any part, that produces the whole phenomena of fevers. I here put again the foundering question to all the partisans of this wretched spasmodic doc-

crefcente effectu, febre, causa, spasmus, maneat, et augeatur, nostri esse necesse."

trine, Is there a power in the whole number of those, that produce fevers, that can be demonstrated, without a previous operation upon the whole system, to go to the surface and produce a spasm? Or is there a remedy, which, without the same previous operation, operates on the surface to remove it? The state of the surface in fevers is the atony and relaxation that have been mentioned: If it is pale and parched at first, that is owing to the weakness of the heart and arteries; if colliquative sweat, and a transmissiion of actual blood through all the pores, follows in the progress of the disease, that is the effect of a greater debility of the same sanguiferous system, acting so weakly upon the blood as to be incapable of keeping it in its proper state of diffusion, and therefore allowing either the thin ferous parts, or some of the red globles, to separate from the more viscid and gross portion of the common mass, and to escape, with a very slight force behind*,

* The medical phrase is *vis a tergo*.

by all the watery outlets, internal as well as external.

CCIV. FURTHER, as spasm has no share in the predisposition to this form of diseases, it also, for that very reason, can have none in the morbid state*, as the same state of the system, that is, debility, precisely constitutes both, with the variation only of degree, so fully now explained†.

CCV. BESIDES, as we have said, though the debility necessary to the formation of spasm, undoubtedly occurs both in febrile and every other form of asthenic diseases; still neither of two circumstances, the concurrence of the one or other of which with the state of debility is essentially necessary to the formation of spasm, takes place in the present case. The vessels are neither in their extremities, nor in any part of their tracts, organs of voluntary motion: They have

* CXCIX. above.

† CXCIV. above.

not, therefore, that dependence upon the will, which, concurring with debility, produces the effect in the fibres of the muscles*: And they are so far from being in the other state of muscular fibres, indispensibly necessary to the production of the other mode of spasm, that the very reverse is their real state. The perspiratory extremities are either altogether empty, as in the dry and shrivelled state of the external surface in the beginning of fevers, or very imperfectly filled, by the serous and thin red particles flowing through them without any distending impetus†.

CCVI. NEXT, as spasm has been shown to be entirely superfluous in the production of sthenic diseases, it is equally so in that of fevers; a full demonstration having been given that sthenic diathesis is sufficient for their production‡. The state of the

* CXLI. to CXLIV. above.

† CC. above.

‡ See the whole first chapter of the Elem. Med. 2d edit. from the CXI paragraph.

surface, that has been mistaken for spasm, is nothing else but asthenic diathesis, a little more prevalent on the surface, than in the interior parts of the body, of which a full explanation will by and by follow. This state, instead of arising from any thing of a tendency to produce a spasm, arises from nothing, but the debilitating hurtful powers that produce all the other symptoms; and is only removed by the stimulant remedies, that remove the whole disease from every part of the system. This proposition is equally applicable in explanation of the state of predisposition that precedes the febrile state: It goes further, and comprehends all the other diseases depending on debility, not febrile, as well as the predisposition to each. Here then is an account of asthenic diseases equally simple, as that given of the other form the sthenic*. And the notion of the febrile part of these diseases depending upon spasm, is equally embarrassing and repugnant to truth.

* CXCVIII. above, part of I.

CCVII. HERE we must rest, and pause in this irksome piece of business. Having, by a complete induction of facts and arguments, refuted the fundamental part of the most futile and erroneous of all medical doctrines, the spasmodic; which, like the ghost of a departed sinner, has, with mischievous effect to mankind, fascinated the senses, and turned the brains of all its visionary adherents. But as it is a confused, heterogeneous, mass of many former erroneous materials, it is expected the reader will not think himself uselessly employed in glancing over an appendix, to the extent of another number, containing a prosecution of the falsity of this motely system through all its windings and doublings, (CXXXVIII. p. 3.).

THE END.

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